R

EtA To.

Vol. 7. Part 12.* Pp. 253-282. 15th December, 1938.

THE PROCEEDINGS

OF THE

ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

IMP. INST. ENT. LIBRARY 15 DEC 1938 SERIAL SEPARATE Ex. 344 B

Series B.
TAXONOMY

(being the continuation of Stylops)

World List abbreviation: *Proc. R. ent. Soc. Lond.* (B)

CONTENTS

	PAGE
Edwards, F. W., M.A., Sc.D., F.R.E.S. On the British Lestremiinae, with notes on exotic species.—7. (Diptera, Cecidomyiidae) . .	253–265, 6 figs.
Meillon, Botha de, D.Sc., F.R.E.S. Notes on African Ceratopogonidae (Diptera) . .	266–270, 3 figs.
Takahashi, Ryoichi. Two Parlatoriini from India (Hemiptera, Coccidae)	271–272, 1 fig.
Book Notices	265
Index	273

LONDON:

PUBLISHED BY THE SOCIETY AND

SOLD AT ITS ROOMS, 41, QUEEN'S GATE, S.W.7

Price 3s. 0d.

* *With title page, contents and index.*

THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

Founded, 1833. Incorporated by Royal Charter, 1885.

PATRON—HIS MAJESTY THE KING.

OFFICERS and COUNCIL for the SESSION, 1938–1939.

J. C. F. Fryer, O.B.E., M.A., *President.*

H. M. Edelsten
A. D. Imms, M.A., Sc.D., F.R.S. } *Vice-Presidents.*
H. Willoughby Ellis, M.I.E.E.

Francis Hemming, C.M.G., C.B.E., *Treasurer.*

O. W. Richards, M.A., D.Sc., *Secretary.*

F. J. Griffin, A.L.A., *Registrar.*

Other Members of Council.

R. B. Benson, M.A.
Brig.-Gen. B. H. Cooke, C.M.G., C.B.E., D.S.O.
C. N. Hawkins.
L. G. Higgins, M.A., F.R.C.S.
B. M. Hobby, M.A., D.Phil.
Sir Guy A. K. Marshall, C.M.G., D.Sc., F.R.S.
N. D. Riley.
W. H. T. Tams.
W. R. Thompson, Ph.D., D.Sc., F.R.S.
B. P. Uvarov, D.Sc.
V. B. Wigglesworth, M.A., B.Ch., M.D.

Trustees of the Society.

R. W. Lloyd.
Sir Edward B. Poulton, F.R.S.

Finance and House Committee.

H. Willoughby Ellis, M.I.E.E. (Chairman).
Prof. P. A. Buxton, M.A.
Brig.-Gen. B. H. Cooke, C.M.G., C.B.E., D.S.O.
G. Fox-Wilson.
C. N. Hawkins.
R. W. Lloyd.

Publication Committee.

W. R. Thompson, Ph.D., D.Sc., F.R.S. (Chairman).
H. E. Andrewes.
M. Burr, D.Sc., F.G.S., A.R.S.M.
B. M. Hobby, M.A., D.Phil.
N. D. Riley.
V. B. Wigglesworth, M.A., B.Ch., M.D.

Library Committee.

R. B. Benson, M.A. (Chairman).
E. A. Cockayne, M.A., M.D., F.R.C.P.
H. M. Edelsten.
B. M. Hobby, M.A., D.Phil.
W. H. T. Tams.
B. P. Uvarov, D.Sc.

Committee for the Protection of British Insects.

W. G. Sheldon (Chairman).
Capt. E. Bagwell-Purefoy.
C. L. Collenette.
W. J. Dow.
J. C. F. Fryer, O.B.E., M.A.
Col. F. A. Labouchere.
N. D. Riley.
H. M. Edelsten (Secretary).

The Executive Officers of the Society are *ex-officio* members of all Committees.

DELEGATES OF THE SOCIETY TO:

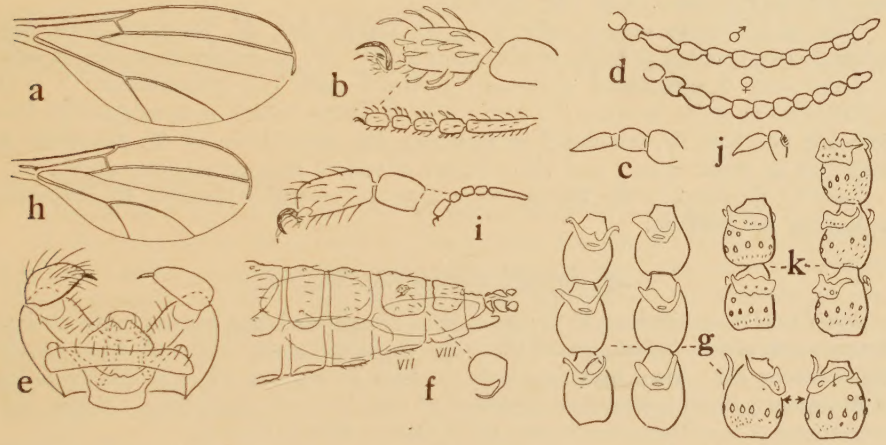
1. **British National Committee for Biology** (Royal Society).
   Sir Thomas Hudson Beare, LL.D., F.R.S.E., appointed 1933.
   Dr. Karl Jordan, F.R.S., appointed 1936.
2. **Conference of Delegates of Corresponding Societies of the British Association for the Advancement of Science.**
   Sir Edward Poulton, F.R.S., appointed 1937.
3. **International Congress of Entomology** (Berlin 1938).
   J. C. F. Fryer, O.B.E., M.A. *Francis Hemming, C.M.G., C.B.E.*
   A. D. Imms, M.A., Sc.D., F.R.S.
4. **Local Committee of Management of Wicken Fen.**
   Mr. H. M. Edelsten. *Mr. E. C. Bedwell.*
   [Delegates nominated by Committee for the Protection of British Insects.]
5. **National Trust for Places of Historic Interest or Natural Beauty.**
   Mr. W. G. Sheldon, appointed 1922.
6. **New Forest Association.**
   Mr. W. Fassnidge, appointed 1934.
7. **Royal Meteorological Society. Phenological Committee.**
   Dr. C. B. Williams, appointed 1937.

ON THE BRITISH LESTREMIINAE, WITH NOTES ON EXOTIC SPECIES.—7. (DIPTERA, CECIDOMYIIDAE)

By F. W. Edwards, M.A., Sc.D., F.R.E.S.

Mycophila Felt.

This genus was founded on a single species with reduced male antennae, the flagellum in the genotype having only ten segments, instead of twelve, as is the case in all other genera of the tribe except *Micromyia*. I am acquainted with two British species which though very distinct from one another in many ways are certainly congeneric with the genotype, *M. fungicola* Felt. The following re-definition of the genus is based on a comparison of these two species.



23

Fig. 23.—a–g, *Mycophila barnesi* sp. n. h–k, *M. speyeri* Barnes. a, h, ♀ wing (twice standard scale); b, i, front tarsus; c, j, palpus; d, outline of antennae; e, hypopygium (twice standard scale); f, ♀ abdomen with spermatheca enlarged; g, k, antennal segments of ♀, different specimens.

Eyes undivided, but bridges narrow, 1–2 facets wide. Palpi short, 2–3 segmented, terminal segment pointed. Antennal flagellum of ♂ 9–10-segmented, without definite crenulate whorls, necks all short; of ♀ 7–9-segmented, sensoria broad and more or less lobed, two on each segment. Mesonotum with few or no hairs between dorso-central rows. Tarsi with or without scales; claws simple; empodium small or absent. Wings with macrotrichia of membrane not very dense; costa reaching nearly as far as the obsolete tip of *M*; *R*1 very short; pore 5 on *rm*.

Hypopygium: tergite narrow but complete; cerci well developed; coxites broadly united ventrally, their internal roots connected by a broad bridge; style with terminal spine; aedeagus slipper-shaped, genital rod absent or indistinct. Abdomen of ♀ not at all extensile, tergites 2–8 all well developed; a single very small spermatheca present. Eggs very large for the size of the insect (as in the subfamily Heteropezinae).

M. barnesi sp. n. (fig. 23, a–g).

A small, rather bright red species (in life). Palpi 3-segmented; division between second and third not always well marked, but these two together markedly longer than first; first without definite sensory patch; third evenly tapering to the sharp tip. Tarsi rather densely clothed with hairs and small scales; empodium short but distinct, its length (excluding the hairs) nearly half that of the claws.

♂. Flagellum 9-segmented, terminal segment constricted in middle, necks less than one-third as long as rest of segments. Hypopygium as figured. Length of body or wing about 1 mm.

♀. Flagellum 9-segmented, terminal segment with distal half smaller, no definite necks; sensoria variable in shape, usually with two spreading lobes, one finger-like, the other broader, but not infrequently irregularly trilobed; in any case each sensorium arises from a single pore. Length of body 1·3–2 mm.; wing 1–1·2 mm.

HERTS.: Letchworth, 1 ♂, 17 ♀♀ on windows, including type ♂. OXON.: Oxford Museum windows, 2 ♀♀ (*Hamm*). CORNWALL: St. Germans, 10 ♀♀ reared from mushrooms, iv.31 (*E. R. Speyer*). LANCS.: Longsight, Manchester, reared from manure, vii.32 (*M. Shields*).

This is evidently nearly related to the Californian *M. fungicola* Felt, the antennal sensoria being quite of the same type; *M. fungicola*, however, is said to have only 9-segmented antennae in the female (*i.e.* presumably 2 + 7) and its size is given as only 0·6 mm. in both sexes, which is considerably less than the smallest *M. barnesi* I have seen; the empodium of *M. fungicola* is described as rudimentary and the number of palpal segments is not given.

Larvae obtained by Mr. Speyer from Cornwall resemble those of *M. fungicola* in having no spatula.

M. speyeri Barnes (fig. 23, h–k).

A still smaller species than *M. barnesi*. Palpi 2-segmented, first segment with distinct sensory patch above, second inserted below tip of first and hardly longer, its inner margin slightly excavated. Tarsi with hairs only, at least no obvious scales in the specimens available; empodium rudimentary, represented only by a few short hairs. Wings with macrotrichia of membrane very scanty, much more so than in *barnesi*.

♂. Flagellum with 9 segments, the terminal segment globular, but sometimes confluent with the eighth, so that the number of segments is one fewer than in *barnesi*. Hypopygium much as in *barnesi*. Length of body or wing 0·7 mm.

♀. Flagellum with 8 segments; sensoria in the form of broad plates with more or less irregular margins but not deeply lobed, though there may be a short finger-like projection on one side; the two sensoria nearly but not quite meeting, each arising from several small pores. Length of body 1 mm.; wing 0·8 mm.

HERTS.: Cheshunt; larvae feeding on mushroom mycelium under glass (*Speyer*).

The above redescription has been prepared from specimens from the original series presented to the British Museum by Mr. Speyer. No further records of the species are available; material at one time determined as *M. speyeri* from Cornwall and Manchester proves on re-examination to be *M. barnesi*.

Micromyia Rond.

This genus was erected for a single European species, *M. lucorum* Rond., which was redescribed by Winnertz. Two of Winnertz's German specimens

are in the British Museum; I have mounted one of these for study, and have also examined the specimens (7 ♂♂, 1 ♀) in Winnertz's collection in Bonn, besides a few British specimens as noted below. The genus is well differentiated in the male sex from most others in the tribe (except *Ceratomyia* and *Tricampylomyza* *) by the peculiarly short antennae, but the female is not so readily distinguished; the most obvious feature applicable to both sexes which will separate *Micromyia* from other genera of the tribe found in Britain is the almost right-angled cubital fork. The following diagnosis may be given:

Eye-bridges narrow, only 1–2 facets wide for the most part, but broader at vertex; the facets irregular, so that the form of the eye approaches that found in *Campylomyza*. Palpi short, 3-segmented. Antenna of ♂ with first segment small, second much larger; flagellum of 7–9 segments without verticils but each bearing only a few hairs, the first five at least small, short, without necks. Antenna of ♀ also short, flagellar segments sessile but larger than in ♂; sensoria forming an interrupted ring. Tarsi with small scales; on front legs first segment only half as long as remaining four together; claws simple, much longer in ♂ than in ♀; empodium narrow but nearly as long as claws. Wings with rather scanty macrotrichia, especially in ♂; *R*1 about equal to *Rs*; costa produced about to level of tip of *M*, but *M* very faint, even when stained. *Cu*2 at right angles with *Cu*1, reaching margin; pore 5 on *rm*. Hypopygium as in *Mycophila*, except that the style has no distinct apical tooth. Abdomen of ♀ slightly extensile; a single large spermatheca.

M. lucorum Rond. (fig. 24).

(*Campylomyza globifera* Hal.)

A small black species, superficially resembling *Monardia nigricans* Edw.

♂. Flagellum in a mounted German ♂ 7-segmented, the first six very short, the seventh long and evidently composed of three short segments fused together (specimens described by Haliday evidently had these three segments separated); the last few segments are much more slender than the three at the base and their number may well be variable. Palpi with first segment not very stout, second longer than third. Tarsi slender, the fifth segment a little stouter, widened apically; claws about as long as fifth segment but not very stout. Wings pale and translucent, with scanty macrotrichia. Hypopygium very small. Wing-length about 1·2 mm.

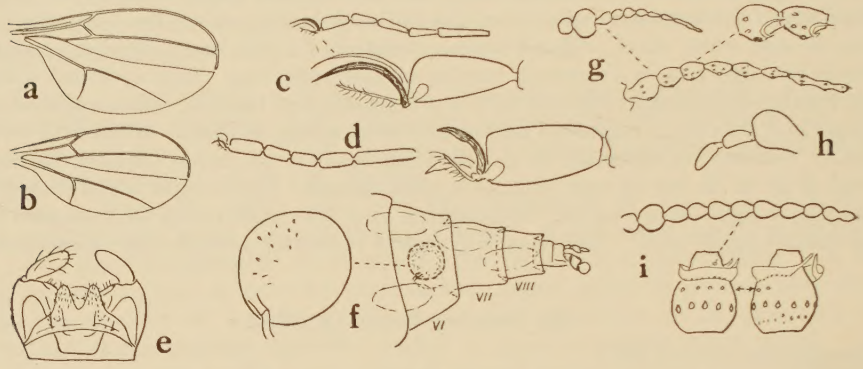
♀. Antennae with second segment somewhat larger than first, but less markedly so than in ♂; the flagellar segments, on the other hand, are relatively stouter, eight in number, the terminal one double, with median constriction. Palpi with first segment very stout, second and third subequal. Sensoria forming an almost complete ring, somewhat as in *Campylomyza*, but here the ring is narrowly interrupted on one side, each end being produced into a finger-like process; the ring arises from numerous small pores. Tarsi less slender than in ♂; claws only half as long as fifth segment. Wings with much more numerous macrotrichia than in ♂, but venation similar. Spermatheca very large and disc-shaped. Wing-length 1·5 mm.; body (extended) nearly 2·5 mm.

Oxon.: Hogley Bog, 2.vii.1911, 1 ♂ as prey of *Hilara maura* Mg., and Oxford Museum, 5.vii.21, 1 ♂ (*Hamm*). Herts.: Letchworth, 1 ♀ on window, ix.36.

* These two genera are unknown to me. *Ceratomyia* (genotype *C. johannseni* Felt, of California) is described as having vein *M* absent and the first front tarsal segment as long as the remaining four together; *Tricampylomyza* (genotype *T. parvula* Kieffer of West Africa) is said to have the eyes divided (as in *Campylomyza*) and the palpi only 1-segmented; in most other respects both resemble *Micromyia*.

As this is the only European species of this group of genera known to me with a right-angled cubital fork I believe the sexes are correctly associated; the Letchworth female is in all respects similar to the one in Winnertz's collection placed with males of *M. lucorum*, which has also 2 + 8 antennal segments (not 8 as stated by Winnertz); Rondani's statement that the female of *lucorum* had *six* antennal segments may also have been erroneous.

The British Museum possesses a series of males from Weenen, Natal (*Thomasset*), and Waldia, Abyssinia (*Macfie*), also one from Accra, Gold Coast (*Macfie*), which differ little if at all from German and British males of *lucorum*; I believe that all belong to the same species.



24

FIG. 24.—*Micromyia lucorum* Rond. a, ♂ wing (Germany); b, ♀ wing (coll. Winnertz); c, ♂ front tarsus; d, ♀ front tarsus (Letchworth); e, ♂ hypopygium; f, tip of ♀ abdomen and spermatheca (Letchworth); g, ♂ antenna; h, i, ♀ palpus and antenna (Letchworth) to scale of g.

Joannisia Kieffer.

(*Camptoza* End.)

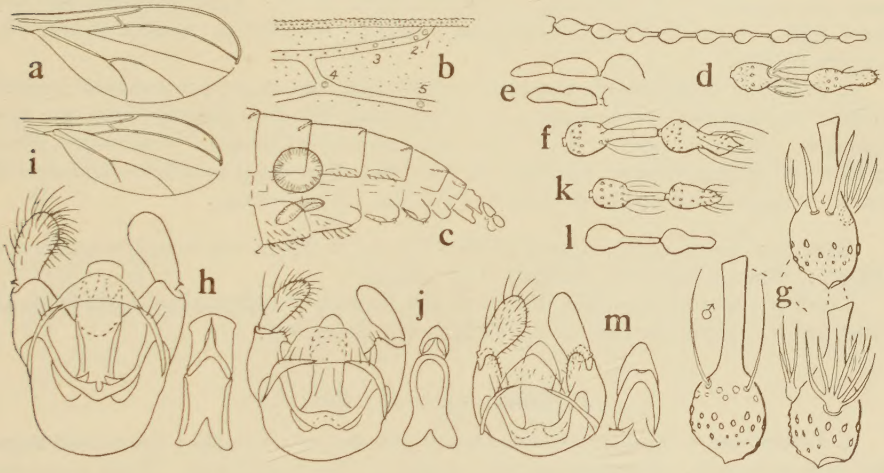
The following diagnosis is based on the comparison of over a dozen species, including *J. sanguinea* Kieff. and *J. kiefferiana* End.

Eye-bridges complete, 2–3 (rarely 4) facets wide. Front not prominent. Palpi 3–4-segmented, never very long, first segment somewhat enlarged. Antennae of ♂ with 2 + 12 segments, but the terminal one usually divided by a more or less conspicuous constriction, so that the number appears at first sight to be 2 + 13; flagellar segments with slender necks which are usually longer than the nodes and are not inserted eccentrically as they are in most other genera of the tribe; nodes usually almost globular, the verticils "campanuliform" (as in *Psychoda*), *i.e.* tending to enclose a cup-shaped space, less spreading than in the other genera; no crenulate rings associated with the verticils even when the hairs are closest together. Antennae of ♀ with 2 + 9 (rarely 2 + 8 or 2 + 10) segments, the terminal one less constricted than in ♂; necks nearly always long, but not so long as in ♂ and nodes usually more oval; sensoria in the form of stout pale bristles (rarely branched), 2–4 in number on each segment.

Mesonotum with the hairs mainly confined to the sides and dorso-central stripes. Legs with scales mixed with hairs on femora and tibiae, vestiture of tarsi composed mainly of scales which are usually fairly broad. Empodium narrow, slightly hairy, nearly or quite as long as claws; claws simple but often more or less thickened subapically; last segment

of front tarsi of ♀ neither swollen nor darkened. Wings with a more or less dense vestiture of short curved hairs or scales. *R* running near costa so that *Sc* is often not traceable; *R*1 2–3 times as long as *Rs*; costa ending either abruptly at tip of *R*5 or very slightly beyond (at most to a distance but little greater than the width of the vein); *R*5 rather strongly curved; *M* and *Cu*1 often faint; *M* straight; pore 5 on *R*5, well beyond pore 4.

Abdomen of ♂: Tergites 6–8 all reduced to very narrow transverse strips, the end of the abdomen contracted and the hypopygium folded over as in *Campylomyza*. Tergite 9 very narrow and usually interrupted in middle, forming a pair of somewhat crescent-shaped strips connected by membrane and bearing few or no hairs; anal segment may be fairly large but entirely membranous. Coxites extensively fused beneath. Style with or without terminal tooth. Aedeagus slipper-shaped; no genital rod. Abdomen of ♀ not markedly extensile; spermathecae (when present) two, larger in some species than in others, and either sclerotised or not, sometimes apparently absent.



25

Fig. 25.—a–h, *Joannisia ramosa* sp. n. a, ♂ wing; b, portion of wing enlarged to show pores; c, tip of ♀ abdomen with spermathecae; d, outline of ♀ antenna with tip enlarged; e, palpus showing variation; f, tip of ♂ antenna; g, antennal segments ♂♀; h, hypopygium with aedeagus shown separately; i–k, *J. trimera* sp. n.: i, ♂ wing; j, hypopygium with aedeagus; k, tip of ♂ antenna; l, m, *J. ovalis* sp. n.: l, tip of ♂ antenna; m, hypopygium.

Kieffer grouped the species according to whether the costa extends slightly beyond the tip of *R*5 or not; Enderlein in adopting this division proposed the name *Camptoza* for those species (*kiefferiana* End., *palustris* Kieff.) in which the costa ends abruptly at the tip of *R*5, leaving the others in *Joannisia*. This character by itself is of little importance, and is often difficult to appreciate; better characters for the division of the genus are to be found in the condition of the spermathecae of the female, the width of the scales on the femora, and the presence or absence of scales on the abdominal tergites.

The genus evidently includes a large number of species and is cosmopolitan in distribution; I have seen specimens from Brazil, Argentine and New Zealand.

J. ramosa sp. n. (fig. 25, a–h).

A brownish species; mesonotum with light brown ground colour and three dark brown stripes, which are usually just separate but may be confluent. Palpi 3-segmented, second and third segments subequal (in one specimen fused together). No membranous area between scutum and scutellum. Dorso-central hairs rather long but not dense, no scales mixed with them. Abdominal tergites almost completely bare; sternites with some hairs mixed with a few narrow scales. Legs clothed with hairs and scales; on femora and tibiae the scales are very narrow, at least six times as long as broad and mostly almost hairlike, on tarsi broader, shorter and denser. Wings clothed moderately densely with curved, slightly flattened hairs, some towards base slightly broadened but hardly recognisable as scales; *R*1 over twice *Rs*; costa produced beyond *R*5 for a distance fully equal to its width; *Cu*2 curved to margin but very faint at tip.

♂. Flagellar segments with a sparse whorl of pale sensorial hairs close to base of neck; last segment constricted in middle. Hypopygium large, of distinctive form owing to the great development of the sternite; coxites not lobed at tip; styles broadest near tip, hairy, without spine; anal segment rounded in middle, not bilobed. Length of wing 1·2, antenna 1·4 mm.

♀. Flagellum 9-segmented, terminal segment long and slightly constricted beyond middle; sensoria three in number on most segments, branched from the base into 3–6 branches. Spermathecae very large, disc-like, extensively darkened round edges, lying in fourth or fifth abdominal segment; sternites 6–8 represented by narrow mid-ventral strips. Length of body (extended) about 1·8–2 mm.; wing 1·3 mm.

Herts.: Letchworth, summer 1936–7, 3 ♂♂, 8 ♀♀ on windows (incl. type ♂). Oxon.: Oxford Museum, 8.vii.20, 1 ♂ (*Hamm*).

The female of this species differs in the branched antennal sensoria from all others of the genus known to me or hitherto described.

J. trimera sp. n. (fig. 25, i–k).

♂. Differs from *J. ramosa* as follows: Scales of tibiae more hair-like; femora and sternites with hairs only. Terminal segment of antenna less constricted. Wings somewhat narrower, *Cu*2 not reaching margin. Hypopygium with the sternite much less developed; styles not so broad; aedeagus differently shaped. Wing-length 0·9 mm.

Herts.: Letchworth, summer 1936, 1 ♂ on window.

J. ovalis sp. n. (fig. 25, l, m).

♂. Closely resembles *J. trimera* except for details of hypopygium: coxite with rounded and finely pubescent apical dorsal lobe; style broadest in middle; aedeagus differently formed. Wing 0·9 mm.

Herts.: Letchworth, viii.1936, 1 ♂ (type) and viii.1937, 1 ♂.

J. albicornis (Mg.) (fig. 26, d, e).

(*Campylomyza albicornis* Mg.)

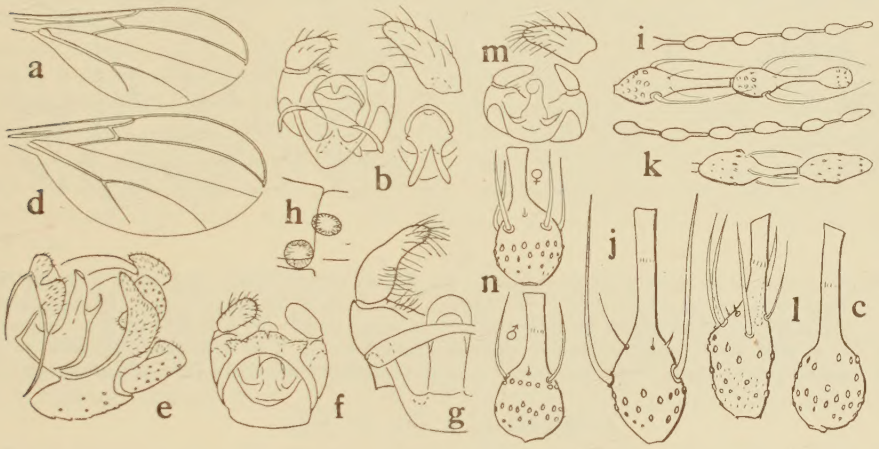
♂. Meigen's type (lacking head) has the wing-venation as in the last two species, but has a very distinctive hypopygium: coxite with greatly developed pubescent dorsal apical lobe shaped like a broad sickle; style bent in middle; anal segment bilobed. Wing-length about 1·3 mm.

J. intermedia Kieff.

This is figured as having the male style bent in middle somewhat as in *albicornis*, but *R*1 is said to be 3–4 times *Rs*. Palpi not specifically mentioned; presumably 4-segmented as in *sanguinea*.

J. perpusilla (Winn.) (fig. 26, g).

In Winnertz's collection in Bonn are six males under this name. I mounted two of these and found one to have a hypopygium like that of *J. sanguinea* Kieff.; the four unmounted specimens appeared to be similar, but the second mounted specimen proved to be quite different, with a hypopygium as in fig. 26, g (though with 4-segmented palpi and constricted terminal segment of antenna as in *sanguinea*). In order that the names *perpusilla* and *sanguinea* may both be conserved, I propose to regard this last specimen as the type of *perpusilla*.



26

Fig. 26.—*Joannisia* spp. a–c, *cornuta* sp. n., ♂ wing, hypopygium and antennal segment; d–e, *albicornis* Mg., type ♂, wing and hypopygium; f, *roralis* sp. n.; g, *perpusilla* Winn., hypopygium; h–j, *cornuta* sp. n.; k–l, *bicolor* sp. n., ♀, spermathecae, outline of flagellum and enlarged segment; m, n, *sanguinea* Kieff., hypopygium and antennal segments (♂♀) of types. (To scale of corresponding parts in fig. 25, g somewhat larger.)

J. sanguinea Kieff. (fig. 26, m, n).

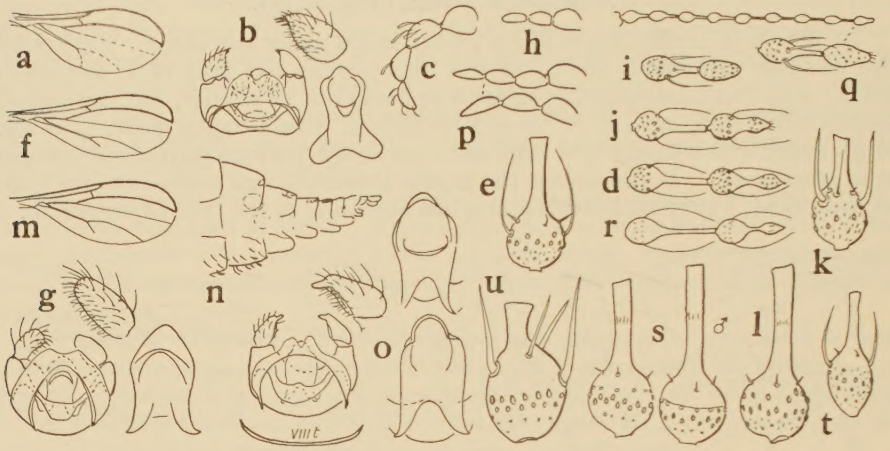
Costa produced slightly but distinctly beyond tip of *R*5. Scales on femora and tibiae very narrow. Palpi 4-segmented, fourth segment somewhat smaller than third. Fourth segment of tarsi somewhat longer than in *ramosa* and related species, on front legs nearly twice as long as broad.

♂. Flagellar segments with whorl of hairs near base of neck, and distal to this with two rather thick sensorial hairs; neck only about as long as nodes; last segment (according to Kieffer) deeply constricted. Tergites 6–8 linear as usual, not enlarged in middle. Hypopygium small, style tapering to the tip, without spines; aedeagus narrow; anal segment (according to Kieffer's figure) bilobed. Length of wing 1·0 mm.

♀. First five flagellar segments with necks somewhat shorter than nodes, which are broadly oval; four moderately stout, simple sensoria reaching just to end of neck. Spermathecae darkened, but extremely small, not one-fifth the diameter of those of *J. ramosa*

though the insects are of about the same size. Length of body (extended) about 1·8 mm., wing 1·2 mm.

Redescribed from 2 ♂♂, 3 ♀♀ from Kieffer's original series, now in the Berlin Museum. Some specimens in Winnertz's collection in Bonn under the name *Campylomyza perpusilla* are apparently this species (see above).



27

FIG. 27.—a–e, *Joannisia muscorum* Kieff (?); f–l, *J. caricis* Kieff. (?); m–t, *J. palustris* Kieff. (?); u, *J. kiefferiana* End., type ♀. a, f, m, ♂ wings; b, g, o, hypopygium with style and aedeagus on larger scale; c, h, p, palpi; d, j, r, tips of ♂ antennae; i, q, tips of ♀ antennae and outline of flagellum; e, l, s, enlarged segments of ♂ antennae; k, t, u, of ♀ antennae. (Some variations shown in case of *palustris*.)

J. cornuta sp. n. (fig. 26, h–j).

Very similar to *J. sanguinea*, which it resembles in having the costa produced slightly beyond *R*5; palpi 4-segmented, with the fourth segment somewhat smaller than the third; femora and tibiae with all the scales very narrow, almost hair-like.

♂. Last segment of antenna deeply constricted, as in *ramosa* and *sanguinea*. Differs chiefly from *sanguinea* in form of aedeagus, which is much broader; internal loop of coxites projecting somewhat beyond the small sterno-coxite. Wing-length 1·3 mm.

♀. Flagellum unusually long, but in the single specimen at hand only 8-segmented, the terminal one with an oval distal node separated from the larger basal node by a longish neck (the terminal node presumably representing the ninth segment, and perhaps normally separate); nodes elongate-oval, necks very long; only two sensoria on each segment, these very long and rather stout. Abdominal vestiture as in *ramosa*; spermathecae extensively darkened round edges, but only about half the diameter of those of *ramosa*. Length of wing 1·3 mm.; body (extended) 2·3 mm.

HERTS.: Letchworth, on window; 1 ♂, summer 1935, 1 ♀ (type) summer 1936.

I am not sure that these two specimens belong to the same species, and regard the female as the type, as its antennal characters seem more distinctive than the small details on which the male is separated from *J. sanguinea*.

J. roralis sp. n. (fig. 26, f).

♂. Very like *J. sanguinea* and *cornuta*, but with quite distinct hypopygium: style shorter and broader, and anal segment with a pair of triangular divergent lobes. Antennae

as in *ramosa*, with necks much longer than nodes; hairs similarly arranged and terminal segment similarly constricted. Palpi broken in both specimens (only 2–3 segments remaining; perhaps normally 4-segmented). Scales on femora and tibiae very narrow. Length of wing 1·2 mm.

HERTS.: Harpenden, 16.viii.1934, 2 ♂♂ (one the type) taken in light-trap at dawn (*C. B. Williams*).

The form of the anal segment appears distinctive, the two specimens being alike in this and other respects. The hypopygium has some resemblance to that of *J. caricis* as determined below, but the wings and antennae indicate a closer relationship with *J. trimera* or *sanguinea*.

J. bicolor sp. n. (fig. 26, k, l).

♀. Flagellum 9-segmented; terminal segment elongate-oval, as large as node of penultimate; necks rather shorter than nodes; four moderately stout sensoria on most segments, two of them close together on the more gibbous ventral side of the node. Palpi (so far as can be seen in the dry specimen) 3-segmented. Thorax: Mesonotum mainly shining black, with a nearly circular membranous yellow area posteriorly, placed half on the scutum and half on the base of the scutellum; dorso-central hairs very short, pale; scutellum with eight marginal dark hairs, in two groups of four. Legs pale, clothed with small scales, those on femora narrow but distinct. Wings much as in *ramosa* and similar species, but *Cu*2 slightly curved at base, not straight. Abdomen yellowish; tergites not at all darkened and quite bare; sternites with some pale hairs but no scales. Length of wing 1·7 mm.

HERTS.: Letchworth, vi.1937, 1 ♀ (type) on window.

This specimen differs from all others of the genus that I have seen in the membranous yellow patch on the mesonotum, which contrasts strikingly with the general black colour of the dorsum. On this account I think it must belong to a different species from any of those described here from the males only.

J. muscorum Kieff. (?) (fig. 27, a–e).

A small brownish species with pale legs; costa produced very distinctly beyond tip of *R*5, but in contrast with the other species with similar venation the scales on femora and tibiae are fairly broad (one-quarter as broad as their length, if not more) and those of the tarsi still broader (about half as broad as their length). Mesonotum with many scales mixed with the dorso-central hairs; no membranous area before or on scutellum; abdominal sternites with numerous small narrow scales but tergites almost entirely bare. Palpi 4-segmented, all segments with scales, fourth segment smaller than third. Vestiture of wings not very dense, in the form of narrow, pointed scales. *R*1 not much longer than *Rs*.

♂. Flagellar segments with the most distal whorl of hairs not much beyond middle of node and very sparse; terminal segment with narrow neck-like constriction in middle. Tergites 6–8 forming linear strips as in most other species of the genus, not widened in middle. Hypopygium small; anal segment bilobed; style short, broad in middle but pointed, with a few small, sharp spines close together at tip. Length of wing 1·0 mm.

♀. Not recognised in Britain.

HERTS.: Letchworth, summer 1936, 4 ♂♂ on window.

J. caricis Kieff. (?) (fig. 27, f–l).

A small species with costa ending abruptly at tip of *R*5, and no obvious scales on femora or mesonotum; very narrow scales on tibiae, and even the tarsal scales not very

broad (about one-quarter as broad as their length). Palpi 3-segmented in all specimens examined, and without scales. Vestiture of wings composed of slightly flattened hairs; *R*1 nearly twice *Rs*; *Cu*2 abbreviated. Abdominal tergites bare; sternites with a few hairs and scales.

♂. Flagellar segments with almost globular nodes, the most distal whorl of hairs not much beyond middle of node, the hairs more numerous, darker, and more spreading than in *muscorum*; terminal segment constricted, the neck thick. Hypopygium : the combined ninth tergite and anal segment forming an arch of even breadth, not bilobed; style short and broad, not tapering and without spine at tip. Tergites 6–8 forming linear strips as usual. Wing-length 0·8 mm.

♀. Flagellar segments with necks not very long, about equal to nodes, terminal segment elongate-oval without obvious constriction; each segment except the last with two rather stout sensoria. Spermathecae apparently absent (not traceable in either of the specimens mounted). Cerci elongate-oval. Wing-length 0·8–1 mm.; body (extended) 1·5 mm.

HERTS. : Letchworth, summer 1936, 2 ♂♂, 2 ♀♀ on window.

J. palustris Kieff. (?) (fig. 27, m–t).

A small species with costa ending abruptly at tip of *R*5; scales of body, legs and wings as in *muscorum* except that there are few or no scales on the mesonotum. Palpi 3- or 4-segmented, fourth segment when present smaller and shorter than third.

♂. Flagellar segments sometimes unicolorous, sometimes with the distal half of the globular node paler than the basal half, in either case the most distal whorl of pale hairs (comprising about 12–15 hairs) is not much beyond middle of node; necks very long; terminal segment constricted, the neck narrow, distal portion variable in size and shape. Tergites 6–8 forming linear strips. Hypopygium small; anal segment bilobed; style tapering to the tip and with a rather thick bare beak the tip of which is usually rounded, but sometimes pointed. Length of wing 0·8–1 mm.

♀. Flagellar segments with necks slender, about as long as nodes; last (9th) segment with distal part narrowed; sensoria rather short and not very stout, 2–4 on each segment except the last. Spermathecae present in all specimens examined, small, round and very pale. Length of wing 0·7–1 mm.; body (extended) 1·3 mm.

HERTS. : Letchworth, vii.–ix.1936–7, 8 ♂♂, 7 ♀♀. LONDON : British Museum (Natural History), vii.1938, 1 ♂. SWEDEN : In lucerne fields, 1937, 3 ♂♂, 1 ♀ (*F. Ossiannilsson*).

The only one of Kieffer's earlier descriptions which could apply to this seemingly common and widespread species is that of *J. palustris*; I therefore adopt this name for it. According to a paratype I have mounted *J. seychellensis* Kieffer differs but little from *palustris* (it is very small; wing only 0·65 mm.). On the other hand, the variation noted among British specimens suggests that more than one species may have been included under this name.

J. kiefferiana Enderlein (fig. 27, u).

♀. First five flagellar segments with necks not or scarcely half as long as nodes (remainder of antenna missing in type); four moderately stout simple sensoria reaching beyond end of neck (not differing so much in thickness as shown in figure); median whorl not very dense. Palpi 4-segmented but not long, fourth segment slightly longer than third. Abdomen with narrow scales on sternites and sides, also on tergites 1–5 (but these just possibly displaced from other parts of the body in mounting); tergites 6–8 quite bare. No trace of spermathecae. Wings with curved hairs, no scales visible; costa ending at tip of *R*5; *R*1 rather longer than usual. Length of body about 2·5 mm.; wing 1·6 mm.

Redescribed from Enderlein's type, lent from the Stettin Museum through the kindness of Dr. A. Kästner; it is in poor condition. The necks of the flagellar segments are shorter than in any other species of the genus known to me.

J. nodosa sp. n. (fig. 28, h–m).

A small species with costa ending abruptly at tip of *R*5; femora and tibiae with fairly broad scales as in *muscorum* and *palustris*; few scales on mesonotum and none on abdominal tergites. Mesonotum and legs dark. Palpi 4-segmented, bearing scales. Wings with narrow scales.

♂. Flagellar segments with the most distal hair-whorl close to base of neck and rather dense, as in *nemorum*, but the few isolated hairs beyond this very short; necks not or scarcely longer than nodes; terminal segment (in type) oval, somewhat pointed, without trace of constriction. Tergites 6–8 each with a knot-like widening in middle (this being an obvious distinction from all other species of the genus known to me). Hypopygium: style rather narrow, pointed; aedeagus of distinctive form. Wing-length 1·0 mm.

♀. A single female is associated with the males as it has the last antennal segment oval, not narrowed distally. Sensoria slender and inconspicuous, three or four on each segment. Leg-scaling as in ♂. Spermathecae apparently absent. Length of wing 0·8 mm.; body (not fully extended) 0·9 mm.

YORKS.: Mulgrave Woods, nr. Whitby, viii.1937, 1 ♂, type (*H. Britten*, jr.). HERTS.: Letchworth, summer 1936, 1 ♂, 1 ♀ on window.

J. nemorum sp. n. (fig. 28, n, o).

A small species with costa ending abruptly at tip of *R*5; scales of femora and tibiae very narrow, those of tarsi broader; no scales on mesonotum or abdominal tergites. Palpi 4-segmented, fourth as long as third. Vestiture of wings not very dense, consisting of flattened hairs.

♂. Flagellar segments with the most distal whorl of hairs close to base of neck and rather dense (15–20 hairs), the few isolated hairs beyond this longer than usual, some reaching middle of neck; necks much longer than nodes; terminal segment with a short constriction, the distal part small and rounded. Tergites 6–8 linear as usual. Hypopygium: anal segment bilobed; style slightly widened beyond middle, tip rounded and without spine; aedeagus of distinctive form. Wing-length 1·2 mm.

♀. Antennae broken in the single specimen available; nodes oval, with 3–6 slender sensorial hairs; necks longer than nodes. No trace of spermathecae in the mount. Length of wing 1·3 mm.

HERTS.: Sherrard's Wood, Welwyn, 23, 30.ix.1937, 4 ♂♂ (incl. type), 1 ♀.

J. fungicola Kieff. (fig. 28, a–f).

Differs from the other species in being much more scaly; the whole abdomen (tergites, lateral membrane and sternites) densely clothed with small scales; numerous rather long and narrow scales mixed with the dorso-central hairs and spreading out to form two broad bands on the mesonotum; femora and tibiae as well as tarsi clothed with broad scales. Palpi 4-segmented, fourth segment longer than third. Mesonotum blackish, not noticeably shining; pleura and abdomen pale. Wings densely clothed with narrow, curved black scales; *R*1 over twice *Rs*; costa ending abruptly at tip of *R*5.

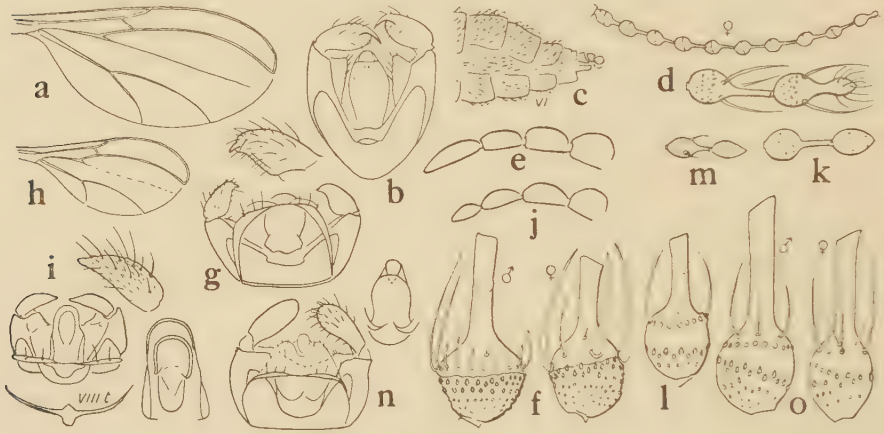
♂. Flagellar segments with basal half of node dark, with dense verticils; distal half pale; just beyond the middle is a dense verticil of pale sensorial hairs, about 16–20 hairs in the ring; necks of only moderate length and darkened; terminal segment constricted in middle. Hypopygium: style with a long terminal spine; anal segment not bilobed. Length of wing 1·2 mm.

♀. Flagellum 10-segmented (thus differing from all the other British species so far known); terminal segment with distal half narrow; nodes with basal half dark as in ♂; sensoria usually four on each segment, thick but very pale. Abdomen rather plump and scarcely extensible, the two spermathecae small, round, pale and unsclerotised, placed near tip of abdomen. Cerci small and round. Wing-length 1·3–1·7 mm.

Herts.: Letchworth, on window; Welwyn, Sherrard's Wood. Bucks.: Ivinghoe. Hants.: New Forest. ix.–x.

One somewhat damaged male from Welwyn (taken with others of this species) perhaps represents another allied species; it has the flagellar segments exactly as described and figured here for *fungicola*, but the hypopygium (fig. 28, g) is rather different; style narrower, with shorter terminal tooth, and aedeagus otherwise.

Kieffer recorded the larvae of *J. fungicola* as feeding on a mould growing on the surface of a toadstool (*Lactarius*).



28

Fig. 28.—a–f, *Joannisia fungicola* Kieff.: a, ♂ wing; b, hypopygium; c, tip of ♀ abdomen; d, outline of ♀ flagellum with tip enlarged; e, palpus; f, antennal segments ♂♀. g, *J. fungicola*, var. ?, hypopygium (flattened). h–m, *J. nodosa* sp. n.: h, ♂ wing; i, hypopygium and eighth tergite; style and aedeagus enlarged; j, palpus; k, l, tips of antennae ♂♀; m, antennal segment ♂. n, o, *J. nemorum* sp. n., hypopygium and antennal segments ♂♀.

Peromyia Kieffer.*

This genus only differs from *Joannisia* (s.str.) in having reduced palpi with only two segments instead of three or four, a difference which is less fundamental than between different species of *Joannisia*. *Peromyia* should probably therefore be included under *Joannisia*.

* Felt has suggested that *Neurolyga* Rond. may be an earlier name for *Peromyia* Kieffer, overlooking Rondani's statement that the palpi are composed of four subequal segments. Rondani's description of the male antennae as having 2 + 13 segments does indeed suggest *Joannisia* or *Peromyia* rather than any other genus of the tribe, as among European species at least it is only in these two genera that the twelfth flagellar segment is binodose; however, according to Rondani the female of *Neurolyga* has 10 subcylindrical and *sessile* flagellar segments, which would exclude *Joannisia*, but could apply to *Campylomyza*. I therefore leave *Neurolyga* as a doubtful synonym of *Campylomyza*.

P. leveillei Kieffer.

Specimens from Kieffer's original series lent me from the Berlin Museum show the following features :—

Eye-bridges three facets wide. Palpi of two segments, second rather longer than first and pointed. Costa reaching slightly but distinctly beyond tip of *R*5. Antenna of ♀ as in *Joannisia*; 2 + 10 segments, last one constricted in middle; sensoria in the form of simple pale bristles. Antenna of ♂ with last segment constricted; nodes of other flagellar segments with subapical whorl of pale hairs. Hypopygium : coxite not lobed at tip; style nearly globular. Spermathecae : two, of moderate size and well sclerotised.

Unidentified genera.

The following Campylomyzine genera were described by Kieffer from the larvae only. When these larvae can be re-discovered and reared it may be found that the adults correspond with some of those described in this series of papers.

Calospatha Kieff. (type *fagicola* Kieff.). Larvae in rotten beech wood.

Trichelospatha Kieff. (type *conigera* Kieff.) and *Tricolpodia* Kieff. (type *anomala* Kieff.). Larvae in rotten oak wood.

Stenospatha Kieff. (type *eriophori* Kieff.). Larvae under submerged leaf-sheaths of cotton-grass. Messrs. Bagnall and Harrison have recorded as *S. eriophori* larvae found in similar situations in several localities in Britain; in one of their localities, Whixall Moss, Mr. C. H. W. Pugh searched in vain for Campylomyzine larvae but did discover Cecidomyiine larvae at roots of cotton-grass.

Book Notice.

Studien zu den deutschen Lycaenen mit besonderer Berücksichtigung der weiblichen Androkonien. Inaugural-Dissertation . . . der . . . Universität zu Jena. Von P. Trübsbach. (*Ber. naturw. Ges. Chemnitz* **25** : 1–54.) 1938. pp. 56, 4 pls.

This booklet is by a chemist interested in Entomology, and concerns itself largely with the origin and cause of sexual dimorphism in Lycaenidae.

The origin of constant forms of Lycaenids is explained and special attention is given to a study of the androconia.

Book Notice.

A catalogue of the original descriptions of the Rhopalocera found north of the Mexican border. Part 1. The Hesperioidea. By E. L. Bell. (*Bull. Cheyenne Mtn Mus., Colo.* **1** (1) : H1–H35.) 1938. Price 50 cents.

This first number of the Bulletin of the Cheyenne Mountain Museum is at once the first part of the catalogue of the original descriptions of North American Rhopalocera. As may be noticed, the pagination of this part is prefixed by the letter H, presumably indicating its contents.

The paper gives full bibliographical references to the place of original description, the references arranged as follows : name, author, original genus where not the genus recognised to-day, journal or work containing the description, date, and, finally, type locality.

In the case of genera the citation of type locality is replaced by the genotype.

The Catalogue is under the editorship of F. Martin Brown, and further families of Rhopalocera are announced as in preparation.

NOTES ON AFRICAN CERATOPOGONIDAE (DIPTERA)

By Botha de Meillon, D.Sc., F.R.E.S.

The types of the new species described in this paper are deposited in the collection of the South African Institute for Medical Research, Johannesburg.

Culicoides distinctipennis Austen.

1912. *Culicoides distinctipennis* Austen, *Bull. ent. Res.* **3** : 101. (Southern Nigeria; Uganda Protectorate.)
1935. *Culicoides wansoni* Goetghebuer, *Rev. Zool. Bot. Afr.* **26** : 477. (Banana, Belgian Congo.) **syn. n.**

Through the kindness of Dr. Wanson of Matadi, Belgian Congo, I have been able to examine the type specimen of *C. wansoni* Goetghebuer. The ornamentation of the wing, the character of the spermatheca as well as other features of this specimen leave no room for doubt that it is the same as *C. distinctipennis* Austen.

Stilobezzia Kieffer.

1911. *Stilobezzia* Kieffer, *Rec. Indian Mus.* **6** : 118.
1915. *Parabezzia* Malloch, *Bull. Ill. Stat. Lab. nat. Hist.* **10** : 358.
1915. *Hartomyia* Malloch, *Bull. Ill. Stat. Lab. nat. Hist.* **10** : 339.
1921. *Eukraiohelea* Ingram & Macfie, *Ann. trop. Med. Parasit.* **15** : 347.

These genera are all allied to *Stilobezzia* in having the median fork petiolate. *Eukraiohelea* has the fore-femora spined and so differs from *Parabezzia* and *Stilobezzia*. *Parabezzia* is apparently only separable from *Stilobezzia* in having but one radial cell. Johannsen * has already commented on the close relationship of these three genera and proposed to sink *Eukraiohelea* under *Parabezzia* as he pointed out that femoral spines are not a good generic character. I have recently had the opportunity of examining some *Parabezzia poikiloptera* Ing. & Macfie and *Eukraiohelea versicolor* Ing. & Macfie from Lourenço Marques, Portuguese East Africa, and find that they both resemble *Stilobezzia* in pharyngeal characters. Further, *P. poikiloptera* has a distinct though small first radial cell. In Ingram and Macfie's figure of this species the first radial cell is shown as absent, but in my specimens, which agree with their description in all other respects, the condition is somewhat as in Malloch's figure of *Hartomyia picta* Mall., though the first cell is still smaller. *Hartomyia* is considered to be a synonym of *Stilobezzia*. I have also found that *Parabezzia poikiloptera* and *Eukraiohelea versicolor* further resemble *Stilobezzia* in the presence of mesonotal pits and in having the alula fringed.

Palpomyia fusca sp. n.

♂. A dark brown shiny midge with pale brown tarsi except the fifth segments which are also dark brown. *Head.* Eyes widely separated, bare except along the inner margins; palps very short, measuring 0·1 mm., apparently four segmented; third segment not swollen and without a sensory pit. *Antennae.* These were unfortunately lost during the

* Johannsen, O. A., 1934, New Species of North American Ceratopogonidae and Chironomidae. *J.N.Y. ent. Soc.* **62** : 344–355.

process of mounting. *Mesonotum.* Very dark brown, shiny, with some heavy bristles above the wing roots; pleura brown; scutellum dark brown with about six bristles and a few small hairs. *Halteres.* Light brown. *Legs.* Extreme bases of the femora pale brown, rest dark brown, armed with heavy black spines as follows: 6–8 on the fore legs,

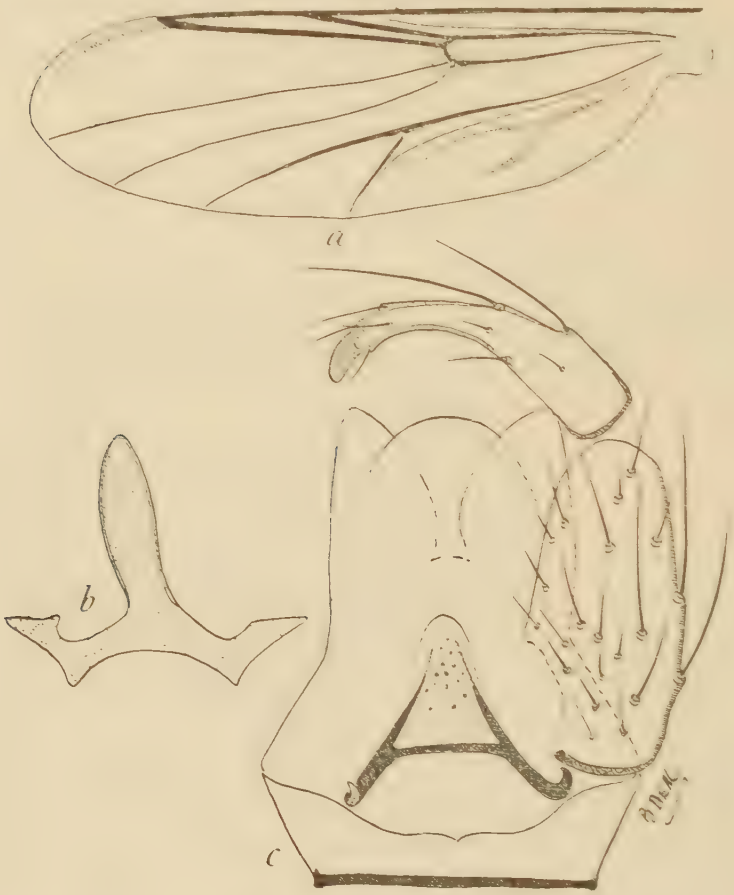
1

FIG. 1.—*Palpomyia fusca* sp. n.: a, wing (fringe not shown); b, IXth segment, aedeagus side-piece and clasper, ventral view; c, parameres.

3–3 on the mid legs and 3–4 on the hind legs; all tibiae dark brown throughout with a long apical black spine on the mid legs; tarsi I–IV pale brown, on the hind legs I and II armed with " bulbous " hairs; tarsus IV elongate on all legs; tarsus V unarmed, dark brown on all legs and contrasting sharply with the rest of the tarsi; claws simple and equal and about half the length of tarsus V on all legs. *Wing* (fig. 1, a). The ratio of the total wing length to that of the costa is 1 : 0·8; the second radial cell slightly longer than the first; median fork only just sessile, fork of cubitus slightly beyond cross-vein, costal margin somewhat darkened. *Abdomen.* Dark brown throughout. *Terminalia* (figs. 1, b, 1, c). IXth sternite slightly excavated, the membrane spiculate; IXth tergite slightly longer than the side-pieces deeply excavated apically; side-pieces normal slightly narrower

apically; claspers well developed, of almost even width throughout, but gradually narrowing down to end in a pointed well-pigmented beak-like termination; aedeagus scoop-shaped; parameres fused, hairy apically, somewhat club-shaped.

Portuguese East Africa. Lourenço Marques, 1 ♂, ii.1938.



2

Fig. 2.—*Bezzia edwardsi* sp. n.: a, wing (fringe not shown); b, outline of parameres; c, ventral view of IXth segment and aedeagus.

This insect differs principally from related species, in which the terminalia have been described, in having the parameres hairy. It may possibly be Goetghebuer's *P. spinulosa*, from the Belgian Congo; a species, however, which is insufficiently described.

Bezzia edwardsi sp. n.

♂. A medium-sized very dark brown species. *Wing length.* Greatest length 1·8 mm., greatest width 0·5 mm. *Head.* Vertex, clypeus and mouth parts dark brown;

eyes widely separated above, bare except along the inner margins. *Palpi.* Short, only slightly longer than the proboscis, third segment not swollen and without a sensory pit, about as long as IV and V together. *Antennae.* Tori very dark brown, rest a shade paler; third segment with a long stalk which is paler than the rest of that segment; IV–IX slightly longer than wide, barrel shaped; X about twice as long as wide; the relative lengths of the last six segments are 15, 20, 29, 30, 38 and 41. *Mesonotum.* Dark brown, shiny in some lights, viewed from the front and with the light from above there is present a dark brown median stripe and one small admedian brown dot in front on each side of the stripe, in such light the sides of the mesonotum appear to be greyish; pleura dark brown, epimeron of the second leg with eight bristles, these bristles appear to be absent or very much weaker in species of *Probezzia*. *Scutellum.* Dark brown throughout with about six long bristles and numerous smaller ones. *Wings* (fig. 2, a). Of the type usually seen in this genus; the ratio of the costal length to total wing length is 1 : 1·2; cross-vein before the middle of the wing; cubitus forks beyond the cross-vein; median fork only just sessile. *Legs.* Very dark brown but tarsi a shade paler; femora of the fore legs somewhat swollen with a subapical dark band and the apex somewhat paler than the rest of the segment, on the mid and hind legs pale apically without the subapical dark band; femora armed with short stout spines as follows: on the fore legs 3–2, mid legs 1–1, hind femora unarmed; tibiae of the fore legs somewhat darkened in the middle, on the mid and hind legs slightly paler basally only, mid tibiae with a short stout black spine. All tarsi unarmed, but first and second tarsus of the hind and mid legs with rows of "bulbous" hairs; fourth tarsus not cordiform or bilobed, somewhat longer than broad; fifth tarsus slightly darkened. Claws simple, equal. *Abdomen.* Very dark brown, shiny. *Terminalia* (fig. 2, b, 2, c). Ninth sternite deeply excavated, bearing some long strong bristles; membrane bare; tergite about as long as the side-pieces bilobed apically; side-pieces well developed; claspers well developed, about as long as the side-pieces, each ending in a well-pigmented beak-like termination; aedeagus of the usual shape but provided with a number of small dark nodules; parameres fused, well pigmented.

Locality. N. Rhodesia; Luanshya, iv.1938. 3 ♂♂, bred from pupae collected amongst vegetation in a stream.

This insect somewhat resembles *B. dewulfi* Goetg., but the fourth tarsus is not cordiform and in the adult, though dark, it is certainly not shiny black. It may possibly be the male of *B. foyi* Ing. & Macfie. The terminalia resembles those of many *Probezzia* but is sufficiently distinct to make it easily recognisable.

The insect is named in honour of Dr. F. W. Edwards, to whose interest and encouragement I owe much.

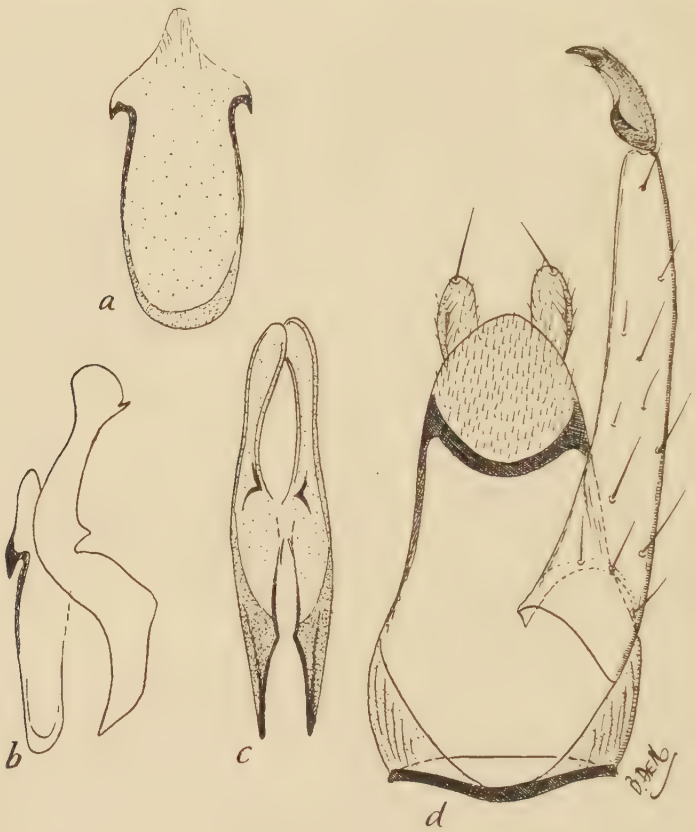
Macroptilum aethiopicum Ingram & Macfie.

1923. *Macroptilum aethiopicum* Ingram & Macfie, *Bull. ent. Res.* **14** : 45. (Mfongosi, Zululand.)
1936. *Macroptilum meeseri* De Meillon, *Publ. S. Afr. Inst. med. Res.* **7** : 204. (Mseleni, Zululand.)
1937. *Macroptilum aethiopicum* Ingram & Macfie, De Meillon, *Publ. S. Afr. Inst. med. Res.* **7** : 351, 353, 357. (N'Kana, N. Rhodesia.)

I have recently secured a few more specimens of this species from N. Rhodesia and amongst them were some males. These males differ from the females in the same way as I have reported for *M. natalensis* De Meill. (1937), that is, they are much smaller than the females and the cross-vein is approximately in the middle of the wing. In the description of *M. bayeri* De Meill. (1937), of which only the male is known, I suggested that it might eventually prove to be that of *M. aethiopicum* Ingram & Macfie. The present material, however, leaves no room for doubt that *M. bayeri* is a separate species. As the

male of *M. aethiopicum* has not been described I append a short description of its salient features.

♂. A dark brown insect similar in coloration to the ♀. *Wing length.* 1·6 mm., greatest width 0·5 mm. *Antennae.* Much as in *M. bayeri* and *M. natalensis*, but resembling the former in having segment XV appreciably longer than XIV. *Wing.* As in *M. bayeri* and *M. natalensis*. *Legs.* The ratio of the hind tibia to the first hind tarsus is 1·2 : 1; the relative lengths of hind tarsi are I, 26; II, 13; III, 7; IV, 2·5; V, 3. *Scutellum.* With five weak bristles. *Terminalia* (fig. 3). IXth sternite deeply excavated, tergite long with a pair of apical processes; side-pieces very long, measuring 0·26 mm. in length, claspers short with a well-pigmented pointed apex; aedeagus weakly pigmented, almost colourless, with a lateral hooked process on each side on the distal half; parameres fused in the middle with long pointed basal processes and two separated club-shaped apical processes.



3

Fig. 3.—*Macroptilum aethiopicum* Ingram & Macfie. a, aedeagus; b, parameres and aedeagus, side view; c, parameres, ventral view; d, IXth segment, side-piece and clasper, ventral view.

This species closely resembles *M. bayeri* and *M. natalensis*, but is easily separated by the character of the parameres.

Locality: N. Rhodesia; Luanshya, iv.1938.

TWO PARLATORIINI FROM INDIA (HEMIPTERA, COCCIDAE)

By Ryoichi Takahashi.

Communicated by Sir Guy A. K. Marshall, F.R.S., F.R.E.S.

Cryptoparlatoria pini sp. n.

Adult ♀. Scale yellowish-brown, sometimes blackish, covered with whitish secretion, long, narrow, convex dorsally, straight, with no ridge, with no secretion behind and laterad of the 2nd skin, about 1·8–2·0 mm. long. The 1st skin pale yellowish-brown, at the front end, about 0·48–0·51 mm. long, about 0·36–0·37 mm. wide; the antennae 5-segmented, a little longer than the space between themselves, the last segment a little longer than the basal 4 taken together; the median lobes wider than long, truncate at the apex, very widely

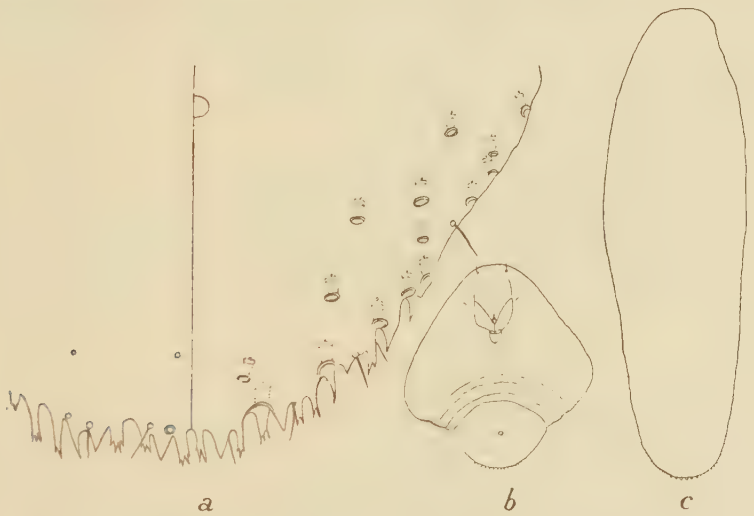


Fig. 1.—*Cryptoparlatoria pini* sp. n., adult female. *a*, pygidium; *b*, body; *c*, second skin.

apart; the 2nd lobes much smaller; the 3rd not discernible. The 2nd skin long, narrow, straight, not constricted, slightly widened on the anterior half except on the front end, about 1·8–2·0 mm. long, about 0·5 mm. wide, with no distinct furrow; the median lobes slightly longer than wide, truncate at the apex, not notched or serrate, parallel, as long as the fimbriated plates, nearly as long as the marginal gland ducts; the 2nd lobes similar to and scarcely smaller than the median; the 3rd lobes smaller than the 2nd, somewhat pointed or rounded apically, sometimes notched on the outside; the 4th lobes absent or represented by rudimentary pointed processes; 2 slender fimbriated plates present between the median lobes, and also between the median and 2nd lobes; 3 similar plates between the 2nd and 3rd lobes; about 11–15 wide fimbriated plates beyond the 3rd lobes, which are mostly wider than long, distinctly separated from each other, and some of them are somewhat narrowed towards the base; about 10 marginal glands present on each side, which are stout, nearly as long as wide, much thickened on the margin of orifice, and the anterior

ones are smaller; a median marginal gland present; about 6–8 submarginal gland ducts present on each side, which are as large as the anterior marginal ones.

Body wide, broadest at the middle, narrowed towards both ends, a little longer than wide, much shorter than the 2nd skin, broadly rounded at the front, with no lateral projection, about 0·53 mm. long. Prosoma with a few very small lateral ducts, and some very small ducts between the anterior and posterior spiracles; abdominal segments not convex laterally, lacking gland spines, with some lateral gland ducts. Antennae close to the front end, with a long bristle. Mouth-parts rather large. Spiracles without pores.

Pygidium rather large, much wider than long, with many longitudinal dorsal lines. Anal opening nearly at the centre. Median lobes conical, longer than wide, pointed apically, widely apart, parallel, not notched or serrate; the 2nd lobes similar to, as large as, or very slightly smaller than, the median; the 3rd lobes very short, conical, pointed; the 4th lobes wanting; 2 slender plates between the median lobes, and also between the median and the 2nd lobes, which are as long as the median lobes and fimbriate at the apex; 3 similar ones between the 2nd and the 3rd; 3–5 conical or divided plates outside of the last lobes, some of which are spine-like. About 8 marginal gland ducts present on each side, which are thickened on the margin of orifice, and the posterior ones are larger, somewhat longer than wide, and as long as the 2nd lobes; no median gland duct discernible. About 7 submarginal dorsal gland ducts present on each side, which are as large as the marginal ones. About 5 long setae present on each side. Circumgenital pores in 4 groups, the anterior groups with about 11–14 pores, the posterior with about 17 or 18. Venter with about 4 pairs of minute submarginal setae.

Habitat. India: Manali, Punjab.

Many specimens were collected on the leaves of *Pinus* sp. by Mr. Ansari and sent for identification by Sir Guy A. K. Marshall.

This species is allied to *Cryptoparlatoria leucaspis* Lindinger, but differs in the elongate second skin, the median lobes being as long as the fimbriated plates, some plates outside of the last lobes being spine-like, and in other structures.

Parlatoria pseudopyri Kuwana.

A 20:274

1932, *J. Plant Prot., Tokyo* **19**: 15.

Habitat. India: Lyallpur and Bhakar, Punjab; Shab Qadar, N.W.F. Province.

Many specimens were taken on rose, jasmine, mango and the "Dharak" plant, in June, September and October, 1937, by Messrs. Ansari, F. Haque and A. Nand, and sent for determination by Sir Guy A. K. Marshall.

Previously known only from Hongkong. Closely allied to *Parlatoria oleae* Colvée (syn. *P. calianthina* Berl. et Leon.), but differs in the median lobes being deeply notched on both sides. Differentiated from *P. pyri* Marlatt by the larger third lobes, the presence of more dorsal gland ducts on the pygidium, and by the more developed fimbriated plates, which are about 16 in number on each side beyond the last lobe; and from *P. atalantiae* Green by the anterior spiracles with 4–6 parastigmatic pores, the distinctly fimbriated plates between the lobes, the presence of 3 plates between the second and third lobes, and of many plates beyond the last lobes, the lobes being not serrate, the marginal gland ducts more in number, and by the presence of dorsal gland ducts on the pygidium.

INDEX

abercrombyi, Forcipomyia, 161.
aberrans, Labienus, 16.
absurdis, Agra, 66.
acaciae, Glaucopela, 10.
Acanthacris ruficornis citrina, 102.
Acanthiophilus, 119.
Aceraius laevicollis, 244.
Aceraius parvulus **sp. n.**, 15.
Aceraius pilifer, 15.
Acinipe, 101.
Aciura caloptera (see *Hendrella*).
Acrida turrita uvarovi, 97.
Acridella nasuta, 97.
Acrotylus insubricus, 101.
acutus, Aprionus, 233.
adamsoni, Atrichopogon, 162.
Aëdes echinus, 74.
Aëdes aegypti, 80.
Aëdes versicolor, 74.
Aëdes (Ochlerotatus) longitubus **sp. n.**, 74.
aegypti, Aëdes, 80.
aemulana, Eucosma, 47.
aeneoviridimicans, Bembidion (Pseudolimnaeum), 52.
aethiopicum, Macroptilum, 269.
aethiopicus, Apanteles, 227.
africana, Ameles, 93.
agarena, Pyrgomorpha, 102.
Agonia dulitana **sp. n.**, 115.
Agonia spathoglottis, 115.
Agra, 53–72.
Agra andrewesi **sp. n.**, 55.
Agra arrowi **sp. n.**, 58, 62.
Agra cephalota **sp. n.**, 53.
Agra germaini **sp. n.**, 53.
Agra gounellei **sp. n.**, 58, 62.
Agra mira **sp. n.**, 63, 71.
Agra prodigiosa **sp. n.**, 55.
Agra smaragdula **sp. n.**, 54.
agrioides, Amphipteryx, 37.
Aiolopus strepens, 99.
Aiolopus thalassinus, 99.
Aivalykus **gen. n.**, 152.
Aivalykus eclectes **sp. n.**, 153.
Aivalykus eclectes simplex **form. n.**, 155.
Aivalykus sperches **sp. n.**, 156.
alacre, Bembidion (Cillenus), 195.
albertisi, Bembidion (Cillenus), 192.
albescens, Bembidion (Cillenus), 194.
albicornis, Joannisia, 258.
albioventris, Styloconops, 158.
albipennis, Apanteles, 227.
albolineatus, Euchorthippus, 98.
albovirens, Bembidion (Cillenus), 194.
Alema nigra **sp. n.**, 252.
Aleurodes extraniens, 182.
Aleurodes filicium, 182.
Aleuroparadoxus, 189.
Aleuroplatus kewensis **sp. n.**, 182.
algeriana, Thalpomena, 99.
algerica, Polyphagina, 92.
algericus, Gryllulus, 93.
Allophaea, 198.
Allophaea ochracea, 197.
alluaudi, Omocestus, 97.
***alpigena, Xyela*, 35.**
altidens, Gonatas, 17.
Amblyspatha (see *Campylomyza*).
Ameles africana, 93.
Ameles maroccana, 93.
americana, Catocha (see *Catotricha*).
americana, Catotricha, 102.
americana, Periplaneta, 92.
Amigus, 102.
Amizmizia puppa, 102.
amoenus, Stenobothrus, 98.
Amphipteryx, 137.
Amphipteryx agrioides, 137.
amurense, Bembidion (Peryphus), 38.
Anarete, 19, 28.
Anarete angustata, 30.
Anarete candidata, 29.
Anarete coracina, 30.
Anarete heracleana **sp. n.**, 29.
Anarete lacteipennis, 29.
Anarete triarthra **sp. n.**, 31.
Anaretella (see *Lestremia*).
andina, Agra, 67.
andrewesi, Agra, 55.
Anethura filchneri, 125.
angada, Pratapa, 172.
angustata, Anarete, 30.
angustula, Octhispa, 114.
Anisoneura (see *Philoganga*).
Anisophaea, 198.
anomala, Tricolpodia, 265.
Anomalochilus, 72.
anophoeta, Dasychira, 218.
Anoplitis marginella, 111.
anser, Redoa, 212.
anserella, Redoa, 212.
antennata, Monardia, 237.
anysis, Pratapa, 170, 172.
Apanteles aethiopicus, 227.
Apanteles albipennis, 227.
Apanteles blancardellae (see *A. circumscriptus*).
Apanteles caesar **sp. n.**, 131.
Apanteles calycinae, 224.
Apanteles circumscriptus, 41.
Apanteles coleophorae **sp. n.**, 225.
Apanteles dioryctriae **sp. n.**, 222.
Apanteles flavolimbatus (see *A. circumscriptus*).
Apanteles impurus, 227.
Apanteles lautellus (see *A. circumscriptus*).
Apanteles sagax, 224.
Apanteles sodalis, 227.
Apanteles transvaalensis, 227.
Apanteles umbellatarum (see *A. circumscriptus*).

apicalis, Chorthippus, 98.
appendiculata, Empis (*Coptophlebia*), 83.
Aprionus, 173, 229.
Aprionus acutus **sp. n.**, 233.
Aprionus bidentatus, 231.
Aprionus bispinosus, 233.
Aprionus brachypterus **sp. n.**, 234.
Aprionus flavidus, 231.
Aprionus flaviventris, 230.
Aprionus lepidus, 233.
Aprionus miki, 234.
Aprionus spiniger, 231.
apsectra, Bryomyia, 210.
Aptinothrips, 1.
Aptinothrips rufus, 1.
Aptinothrips stylifer, 1.
araucariae, Imbilius, 9.
Arctornis hemilabda **sp. n.**, 211.
Arctornis l-nigrum, 211.
Arcyptera maroccana, 99.
argyoides, Devadatta, 138.
argyrognomon, Lycaeides, 5.
argus, Plebejus, 5.
Aristotelia hermanella, 47.
arrowi, Agra, 58, 62.
arrowi, Sceloenopla (*Ocnosispa*), 109.
arsinoë, Vindula, 86.
asela, Vindula erota, 86.
associatus, Belonuchus, 150.
Asterochiton, 186.
atalantiae, Parlatoria, 272.
ater, Mischocyttarus, 134.
ater, Tetraxyphus, 206, 207.
atlas, Sphingonotus coerulans, 100.
Atrichopogon adamsoni, 162.
Atrichopogon glaber, 162.
Atrichopogon harrisi **sp. n.**, 163.
Atrichopogon insigniventris, 162.
Atrichopogon woodfordi **sp. n.**, 162.
atronotata, Dasyhelea, 158.
attelaboides, Agra, 65.
Aulacocyclus celebensis, 244.
auroaeneus, Staphylinus (*Platydracus*), 150.
aziyada, Pratapa, 172.
azruensis, Lissoblemmus, 93.
azurescens, Sphingonotus, 100.

badeni, Chalepus, 112.
baganda, Pratapa, 172.
barberi, Catocha, 106.
barnardi, Euryphalara, 119.
barnesi, Mycophila, 254.
baswana, Pantana, 216.
batesi, Macrolinus, 15.
battaka, Vindula erota, 86.
bayeri, Macroptilum, 769.
Belonuchus associatus **sp. n.**, 150.
Belonuchus associatus morosus **var. n.**, 150.
Belonuchus javanus **sp. n.**, 150.
Belonuchus kedirianus **sp. n.**, 149.
Bembidion (*Cillenus*), 190–196.
Bembidion (*Cillenus*) *insularum* **sp. n.**, 196.
Bembidion (*Cillenus*) *simicum* **sp. n.**, 191.
Bembidion (*Peryphus*) *amurense*, 38.
Bembidion (*Peryphus*) *nitidulum*, 37.
Bembidion (*Peryphus*) *pseudolucillum* **sp. n.**, 37.
Bembidion (*Plataphus*) *infuscatipenne* **sp. n.**, 38.
Bembidion (*Plataphus*) *lucillum*, 37.
Bembidion (*Plataphus*) *persuasum* **sp. n.**, 38.
Bembidion (*Plataphus*) *prasinum*, 37.
Bembidion (*Pseudolimnaeum*) *aeneoviridimicans* **sp. n.**, 52.
Bembidion (*Pseudolimnaeum*) *bryanti*, 52.
Bembidion (*Pseudolimnaeum*) *doderoi*, 52.
Bembidion (*Pseudolimnaeum*) *galloisi* **sp. n.**, 52.
Bembidion (*Pseudolimnaeum*) *viridimicans*, 52.
Bembidion (*Trichoplataphus*) *oxyglymma*, 37.
bergrothi, Bryomyia, 210.
Bezzia dewulfi, 269.
Bezzia edwardsi **sp. n.**, 268.
Bezzia foyi, 269.
bicolor, Campylomyza, 177.
bicolor, Joannisia, 261.
bicolor, Leptaulax, 248.
bidentatus, Aprionus, 231.
bifida, Cordylomyia, 201.
biguttulus, Chorthippus, 98.
bipartita, Dactylispa, 116.
bisignata, Paracinema tricolor, 99.
bispinosus, Aprionus, 233.
blancardella, Lithocolletis, 45.
blancardellae, Apanteles (see *A. circumscriptus*).
blanka, Pratapa, 169, 170.
Bledius (*Pucerus*) *louwerensi* **sp. n.**, 148.
Botryonopa concinna, 115.
Botryonopa dulitana **sp. n.**, 115.
brachypterus, Aprionus, 234.
brenthoides, Agra, 54.
brevicollis, Agra, 55.
brevinervis, Catarete, 107.
bryanti, Bembidion (*Pseudolimnaeum*), 52.
Bryomyia, 173, 208.
Bryomyia apsectra **sp. n.**, 210.
Bryomyia bergrothi, 210.
Bryomyia cambrica **sp. n.**, 210.
Bryomyia trifida, 209.
burdigalensis, Gryllulus, 93.
burmana, Pratapa, 168, 169.

caesar, Apanteles, 131.
calculis, Pratapa icetoides, 171.
Calephorus compressicornis, 97.
calianthina, Parlatoria (see *P. oleae*).
caliendrum, Sciobia, 94.
calliopsis, Lycaeides, 5.
Calliptamus spp., 102.
Calodactylus, 72.
caloptera, Hendrella, 117.
Calospatha, 265.
Calospatha fagicola, 265.
calvescens, Dasyhelea, 157.
calycinae, Apanteles, 224.
cambrica, Bryomyia, 210.
campestris, Gryllus, 93.
Campylomyza, 173, 174.
Campylomyza spp., 175–182.
Campylomyza furva **sp. n.**, 179.
Campylomyza lobata **sp. n.**, 181.
candidata, Anarete, 29.
Canestra **gen. n.**, 72.
Canestra marshalli **sp. n.**, 73.
capusa, Pratapa, 172.
caraboides, Xenorhyncocoris, 135.
caricis, Joannisia, 261.
Catarete, 107.
Catarete brevinervis, 107.
Catocha, 104.
Catocha crassitarsis, 106.

Catocha kiefferi, 106.
Catocha latipes, 104.
Catoptria (see *Eucosma*).
Catotricha **gen. n.**, 102.
Catotricha americana, 102.
Catotricha nipponensis, 102.
Catotricha subobsoleta, 102.
cautus, *Chalepus*, 112.
cavella, *Lithocolletis*, 45.
celebensis, *Aulacocyclus*, 244.
celebensis, *Vindula arsinoë*, 86.
cephalota, *Agra*, 53.
cephalotes, *Xenochalepus*, 112.
Ceratomyia, 255.
Ceratomyia johannseni, 255.
Cetejus lateralis **sp. n.**, 16.
cetioides, *Gonatas*, 17.
Chabria kinabalensis **sp. n.**, 251.
chaconi, *Stilobezzia*, 166.
chalcoptera, *Agra*, 56.
Chalepus badeni, 112.
Chalepus cautus, 112.
Chalepus cordiger, 112.
Chalepus viduus, 112.
chalmeri, *Bembidion* (*Cillenus*), 195.
chalybeata, *Gonophora*, 116.
chapmani, *Uromenus*, 95.
chaudoiri, *Agra*, 55.
chekiangensis, *Dasychira*, 218.
Chelaria conscriptella, 47.
chevreuxi, *Sciobia*, 94.
chinensis, *Dasychira*, 218.
Chorthippus apicalis, 98.
Chorthippus biguttulus, 98.
Chorthippus jucundus, 98.
chrysocera, *Empis* (*Coptophlebia*), 83.
Cillenus (see *Bembidion*).
cincinna, *Corinthomyia*, 203.
cinctiventris, *Stenus* (*Hypostenus*), 149.
cinerea, *Lestremia* (*L.*), 25.
circumscriptus, *Apanteles*, 41.
citrina, *Acanthacris ruficornis*, 102.
clavipes, *Agra*, 67.
cleobis, *Lycaena* (see *Lycaeides subsolans*).
cleobis, *Pratapa*, 169, 172.
Clinocarispa fasciata, 111.
Clinocarispa plaumanni **sp. n.**, 111.
Clinocarispa subhomalina **sp. n.**, 111.
cochlearis, *Agra*, 66.
Coenobius marginipennis **sp. n.**, 249.
coerulans, *Sphingonotus*, 100.
coerulescens, *Oedipoda*, 99.
coffeae, *Rhembastus*, 88.
Colaspoides vitiensis **sp. n.**, 250.
Coleophora fuscidinella, 227.
coleophorae, *Apanteles*, 225.
Comacupes foveicollis, 244.
complicata, *Dasychira*, 217.
compressicornis, *Calephorus*, 97.
concinna, *Botryonopa*, 115.
concomitella, *Lithocolletis*, 47.
conigera, *Trichalospatha*, 265.
conjuncta, *Dasychira*, 217.
conscriptella, *Chelaria*, 47.
contiguus, *Staphylinus* (*Platydracus*), 151.
convergens, *Orgyia*, 219.
Coptophlebia (see *Empis*).
coracina, *Anarete*, 30.
cordiger, *Chalepus*, 112.
Cordylomyia, 173, 199.
Cordylomyia bifida **sp. n.**, 201.
Cordylomyia hammi **sp. n.**, 201.
Cordylomyia pinetorum **sp. n.**, 202.
Cordylomyia rudis, 199.
Cordylomyia xylophila **sp. n.**, 200.
Corinthomyia, 173, 203.
Corinthomyia cincinna, 203.
cornuta, *Joannisia*, 260.
coronata, *Sphaerocera* (see *S. crenata*).
corsicus, *Telebolus*, 156.
costaricana, *Sternostena*, 110.
cotys, *Pratapa*, 168, 170.
crassitarsis, *Catocha*, 106.
crenata, *Sphaerocera*, 128.
Crepidodera evansi **sp. n.**, 251.
cribripennis, *Mesoclanis*, 120.
crux, *Pseudapries*, 11.
Cryptoparlatoria leucaspis, 272.
Cryptoparlatoria lini **sp. n.**, 271.
ctesia, *Pratapa*, 169, 170.
Culicoides spp., 164.
Culicoides distinctipennis, 266.
Culicoides mollis, 158.
Culicoides orientalis, 158.
Culicoides pusillus, 165.
Culicoides wansoni (see *C. distinctipennis*).
cupreola, *Agra*, 56.
curva, *Xyela*, 36.
cyanosticta, *Agra*, 54.
cyclopica, *Tephrella* (see *Dicheniotes gracilipes*).
cygna, *Redoa*, 212.
Cylophora (see also *Campylomyza*).
Cylophora fasciata, 177.
cymbicornis, *Redoa*, 212.
Cynthia (see *Vindula*).

Dactylispa spp., 114–115, 116.
Dacus (*Gymnodacus*) *mesomelas*, 117.
Dacus (*Metidacus*) *lotus*, 117.
dajakorum, *Vindula arsinoë*, 86.
damara, *Pratapa*, 172.
dantini, *Dociostaurus*, 99.
Dasychira spp., 216–219.
Dasychira chekiangensis **sp. n.**, 218.
Dasychira chinensis hunanensis **subsp. n.**, 218.
Dasychira leucomene **sp. n.**, 216.
Dasychira locuples yunnanensis **subsp. n.**, 219.
Dasychira nox **sp. n.**, 218.
Dasychira phloeobares **sp. n.**, 217.
Dasyhelea atronotata **sp. n.**, 158.
Dasyhelea calvescens **sp. n.**, 157.
Dasyhelea humilis **sp. n.**, 159.
debilipalpis, *Culicoides*, 164.
decipiens, *Tephrella*, 117.
Decispella monochiri, 114.
declinata, *Lestremia*, 31.
decorus, *Oedaleus*, 99.
defecta, *Lestremia* (*Anaretella*), 27.
deichmülleri, *Steleopteron*, 141.
deione, *Vindula arsinoë*, 86.
dentatus, *Leptaulax*, 248.
denticollis, *Eremiaphila*, 92.
depressus, *Macrolinus*, 15.
deva, *Pratapa*, 169, 171.
Devadatta, 138.
Devadatta argyoides, 138.
Devadatta multinervosa, 138.
Devadatta podolestoides, 138.

dewulfi, Bezzia, 269.
Dicheniotes **gen. n.**, 118.
Dicheniotes spp., 118.
Dioryctria peyerimhoffi, 224.
dioryctriae, Apanteles, 222.
Diphlebia, 139.
dipotamica, Sumeria, 144.
discoidalis, Dactylispa, 116.
discreta, Dactylispa, 115.
dispar, Dicheniotes, 118.
disparilis, Numenes, 219.
distigma, Dicheniotes, 118.
distinctipennis, Culicoides, 266.
Dociostaurus dantini, 99.
Dociostaurus genei, 99.
Dociostaurus maroccanus, 99.
doderoi, Bembidion (*Pseudolimnaeum*), 52.
domesticus, Gryllulus, 93.
dorsociliatum, Lecanium, 126.
Doryctes, 156.
dubia, Mesoclanis, 120.
dubia, Pseudoglomeris, 124.
dulitana, Agonia, 115.
dulitana, Botryonopa, 115.
duplicata, Agra, 59.
Dysphaea ethela, 198.
Dysphaea gloriosa **sp. n.**, 197.

echinus, Aëdes, 74.
Echo, 143.
Echthromorpha notulatoria, 40.
Echthromorpha samoana **sp. n.**, 40.
eclectes, Aivalykus, 153.
edwardsi, Bezzia, 268.
elaina, Agra, 71.
elegans, Ontholestes, 151.
elongella, Gracilaria, 47.
elutella, Lithocolletis, 47.
Empis, 81.
Empis (*Coptophlebia*) *appendiculata* **sp. n.**, 83.
Empis (*Coptophlebia*) *chrysocera*, 83.
Empis (*Coptophlebia*) *valga* **sp. n.**, 83.
Eremiaphila denticollis, 92.
eriophori, Stenospatha, 265.
erosa, Dicheniotes, 118.
erota, Vindula, 86.
erotella, Vindula arsinoë, 86.
erotoides, Vindula arsinoë, 86.
ethela, Dysphaea, 198.
Eucatocha **gen. n.**, 106.
Eucatocha barberi, 106.
Euchorthippus albolineatus, 98.
Eucosma aemulana, 47.
Eugaster guyoni, 94.
Eugaster nigripes, 94.
Eugaster spinulosus, 94.
Eukraiohelea (see *Stilobezzia*).
Euphaea, 198.
Eupolyphaga sinensis, 125.
Eupolyphaga thibetana, 124.
Eupolyphaga yunnanensis, 124.
Euproctis spp., 214.
Euproctis hunanensis **sp. n.**, 215.
Euproctis leucozona **sp. n.**, 214.
Euproctis melanoma **sp. n.**, 214.
Euproctis mesostiba **sp. n.**, 215.
Euproctis xuthonella **sp. n.**, 214.
Euryparyphes, 101.
Euryphalara **gen. n.**, 118.
Euryphalara barnardi, 119.
Euryphalara barnardi extensa **var. n.**, 119.
Euryphalara mecistocephala, 119.
Euryphalara reticulata, 119.
evansi, Crepidodera, 251.
exarata, Agra, 64, 68.
excavata, Agra, 56.
extensa, Euryphalara barnardi, 119.
extensa, Pratapa, 172.
extraniens, Aleurodes, 182.

faqicola, Calospatha, 265.
falcozi, Sphaerocera, 130.
fasciata, Clinocarispa plaumanni, 111.
fasciata, Cylophora, 177.
fasciata, Morphacris, 99.
fasciata, Rivetina, 93.
feisthameli, Agra, 59, 60.
filchneri, Anechura, 125.
filicium, Aleurodes, 182.
Finlaya (see *Aëdes*).
finoti, Sciobia, 93.
finotianus, Sphingonotus, 100.
fitzgeraldi, Mischocyttarus, 134.
flavicoxa, Campylomyza, 178.
flavidus, Aprionus, 231.
flavipennis, Thalpomena algeriana, 100.
flavipes, Campylomyza, 175.
flaviventris, Aprionus, 230.
flavolimbatus, Apanteles (see *A. circumscriptus*).
flindersiae, Neomerimnetes, 8.
foraminosa, Agra, 63, 72.
Forcipomyia abercrombyi **sp. n.**, 161.
Forcipomyia ingrami, 160.
Forcipomyia inornatipennis ornaticrus, 160.
Forcipomyia pictoni **sp. n.**, 161.
Forcipomyia raleighi **sp. n.**, 160.
Forficula uvarovi, 125.
formosanum, Bembidion (*Cillenus*), 192.
försteri, Monolexis, 152.
foveicollis, Aulacocyclus, 244.
foveigera, Agra, 56.
foyi, Bezzia, 269.
fungicola, Joannisia, 263.
fungicola, Mycomyia, 254.
furva, Campylomyza, 179.
fusca, Campylomyza, 179.
fusca, Lestremia (*L.*), 27.
fusca, Palpomyia, 266.
fuscidinella, Coleophora, 227.
fuscipes, Campylomyza, 176.
fuscocincta, Oedipoda, 99.

galloisi, Bembidion (*Pseudolimnaeum*), 52.
gedeana, Vindula erota, 86.
gelon, Plesthenus quadricornis, 248.
genei, Dociostaurus, 99.
gentilis, Octhispa, 114.
Geomantis larvoides, 93.
germaini, Agra, 53.
gestroi, Oncocephala, 114.
giornae, Pezotettix, 102.
glaber, Atrichopogon, 162.
glaucinoptera, Dasychira, 218.
Glaucopela acaciae, 10.
glaucoptera, Dasychira jankowskii, 219.
Glomerexis **gen. n.**, 123.
Glomerexis tibetana **sp. n.**, 123.
gloriosa, Dysphaea, 197.

goldingi, Monolepta, 88.
Gomphus, 139.
Gonatas altidens, 17.
Gonatas cetioides, 17.
Gonatas intermedius **sp. n.**, 17.
Gonatas minimus, 17.
Gonatas pumilio, 17.
Gongomastix, 19, 31.
Gonophora chalybeata, 116.
gossypii, Monolepta (*Candezea*), 88.
gounellei, Agra, 58, 62.
Gracilaria elongella, 47.
Gracilaria semifascia, 45.
Gracilaria syringella, 47.
Gracilaria tringipennella, 47.
gracilipes, Dicheniotes, 118.
gracillima, Sternocthispa, 113.
graeca, Xyela, 35.
graminea, Agra, 55.
grisea, Platycleis, 94.
Gryllomorpha, 94.
Gryllotalpa, 93.
Gryllulus algericus, 93.
Gryllulus burdigalensis, 93.
Gryllulus domesticus, 93.
Gryllus campestris, 93.
guttatus, Culicoides, 164.
guyoni, Eugaster, 94.
Gymnodacus **subgen. n.**, 117.

hammi, Cordylomyia, 201.
Haplodema paraguayensis, 74.
Haplodema rufescens **sp. n.**, 73.
harrisi, Atrichopogon, 163.
Hartomyia (see *Stilobezzia*).
Hecabolus sulcatus, 152.
Heliocharis, 137.
hemilabda, Arctornis, 211.
Hendrella **gen. n.**, 117.
Hendrella caloptera, 117.
heracleana, Anarete, 29.
hermannella, Aristotelia, 47.
Heterotricha, 104.
hieroglyphica, Mesoclanis, 120.
Hilara maura, 255.
hilaris, Agra, 56.
hipparia, Redoa, 213.
hoenei, Euproctis, 214.
Holosus louwerensi **sp. n.**, 146.
Hoplia, 72.
humilis, Agra, 56.
humilis, Dasyhelea, 159.
hunanensis, Dasychira chinensis, 218.
hunanensis, Euproctis, 215.
Hypostenus (see *Stenus*).

icetas, Pratapa, 169.
icetoides, Pratapa, 169, 171.
ignipennis, Agra, 56.
Imbilius **gen. n.**, 9.
Imbilius araucariae **sp. n.**, 9.
immersa, Agra, 56.
impurus, Apanteles, 227.
incisa, Agra, 65.
Indophaea, 198.
inermis, Margattea, 121.
infuscatipenne, Bembidion (*Plataphus*), 38.
ingrami, Forcipomyia, 160.
inornatipennis, Forcipomyia, 160.
insignatus, Oxychalepus, 112.
insigniventris, Atrichopogon, 162.
insubricus, Acrotylus, 101.
insularum, Bembidion (*Cillenus*), 196.
intermedia, Joannisia, 259.
intermedia, Strobliella, 108.
intermedius, Gonatas, 17.
invitus, Plesthenus, 247.
iris, Agra, 70.
Iris oratoria, 93.
italicus, Calliptamus, 102.

jacobsoni, Dactylispa, 116.
Jamides zebra, 170.
jamkowskii, Dasychira, 219.
javana, Vindula arsinoë, 86.
javanus, Belonuchus, 150.
jedličkai, Agra, 70.
Joannisia, 174, 256–264.
Joannisia bicolor **sp. n.**, 261.
Joannisia cornuta **sp. n.**, 260.
Joannisia nemorum **sp. n.**, 263.
Joannisia nodosa **sp. n.**, 263.
Joannisia ovalis **sp. n.**, 258.
Joannisia ramosa **sp. n.**, 258.
Joannisia roralis **sp. n.**, 260.
Joannisia trimera **sp. n.**, 258.
johannseni, Ceratomyia, 255.
jucundus, Chorthippus, 98.
julii, Xyela, 35.

katonae, Dicheniotes, 118.
kediriana, Naddia, 151.
kedirianus, Belonuchus, 149.
kedirianus, Osorius, 148.
kedirianus, Oxytelus (*Tanycracus*), 147.
kewensis, Aleuroplatus, 182.
kiefferi, Catocha, 106.
kiefferiana, Joannisia, 262.
kinabalensis, Chabria, 251.
kollari, Monardia, 240.
Kuchinga (see *Margattea*).

Labienus aberrans **sp. n.**, 16.
lacteipennis, Anarete, 29.
Laelia lilacina, 216.
Laelia pantana **sp. n.**, 216.
laeticolor, Agra, 71.
laevicollis, Acerainus, 244.
laminatus, Plesthenus, 246.
lantanella, Lithocolletis, 45.
larvoides, Geomantis, 93.
laterale, Bembidion (*Cillenus*), 191.
lateralis, Cetejus, 16.
Lathrobium quadriceps **sp. n.**, 149.
latipennis, Macrolinus, 15.
latipennis, Prosopodonta, 109.
latipes, Catocha, 106.
lautella, Lithocolletis, 45.
lautellus, Apanteles (see *A. circumscriptus*).
Lecanium dorsociliatum **sp. n.**, 126.
lecerfi, Omocestus, 97.
lepidus, Aprionus, 233.
lepineyi, Omocestus, 97.
Leptaulax spp., 244, 248.
Leptoconops, 158.
Lestremia, 19, 25.
Lestremia declinata, 31.

Lestremia (*Anaretella*) *defecta*, 27.
Lestremia (*Anaretella*) *strobli* **sp. n.**, 27.
Lestremia (*Lestremia*) *cinerea*, 25.
Lestremia (*Lestremia*) *fenestrata*, 25.
Lestremia (*Lestremia*) *fusca*, 27.
Lestremia (*Lestremia*) *leucophaea*, 27.
LESTREMIINAE, 23.
leucaspis, *Cryptoparlatoria*, 272.
leucomene, *Dasychira*, 216.
leucophaea, *Lestremia* (*Lestremia*), 27.
leucozona, *Euproctis*, 214.
leveillei, *Peromyia*, 265.
lila, *Pratapa*, 172.
lilacina, *Laelia*, 216.
limbata, *Dicheniotes*, 118.
Limnopneuma (see *Anarete*).
Limnopneumella (see *Anarete*).
lineola, *Octhispa*, 114.
Lissoblemmus azruensis, 93.
Lissoblemmus (*Mesoblemmus*) *uvarovi*, 93.
Lithocolletis spp., 45–47.
l-nigrum, *Arctornis*, 211.
lobata, *Campylomyza*, 181.
Locharna strigipennis, 219.
locuples, *Dasychira*, 219.
longicornis, *Agra*, 56.
longitubus, *Aëdes* (*Ochlerotatus*), 74, 76.
longula, *Xyelatana*, 34.
lotus, *Dacus* (*Metidacus*), 117.
louwerensi, *Bledius* (*Pucerus*), 148.
louwerensi, *Holosus*, 146.
louwerensi, *Trogophloeus* (*Troginus*), 147.
lowii, *Pratapa*, 169.
lozanoi, *Tettigonia*, 94.
lucasi, *Omocestus*, 97.
lucasii, *Sphingonotus*, 100.
lucens, *Stereoderus*, 12.
lucida, *Pratapa*, 172.
lucifera, *Lycaena*, 6.
lucillum, *Bembidion* (*Plataphus*), 37.
lucorum, *Micromyia*, 254.
luculenta, *Campylomyza*, 175.
lugubris, *Temnochalepus*, 112.
lutea, *Agra*, 61.
Lycaeides argyrognomon, 5.
Lycaeides calliopsis, 5.
Lycaeides cleobis (see *L. subsolans*).
Lycaeides subsolans, 7.
Lycaena (see also *Lycaeides*).
Lycaena lucifera, 6.
Lycaena micrargus, 6.
Lymantria mathura, 216.
Lymantria nebulosa, 216.
Lymantriids, from China, 211–221.

Macrolinus batesi, 15.
Macrolinus depressus, 15.
Macrolinus latipennis, 15.
Macrolinus puncticollis **sp. n.**, 14.
Macrolinus punctipennis **sp. n.**, 245.
Macroptilum aethiopicum, 269.
Macroptilum bayeri, 269.
Macroptilum natalensis, 269.
Macroxyela, 34.
magna, *Monardia*, 238.
magnipalpis, *Mesoclanis*, 120.
mandibularis, *Plesthenus*, 247.
Mantis religiosa, 93.
Margattea, 121.
Margattea inermis **sp. n.**, 121.
marginata, *Euproctis*, 216.
marginella, *Anoplitis*, 111.
marginipennis, *Coenobius*, 249.
marilandica, *Neocatocha*, 106.
maroccana, *Ameles*, 93.
maroccana, *Arcyptera*, 99.
maroccana, *Odontura*, 94.
maroccana, *Oxythestis*, 93.
maroccanus, *Dociostaurus*, 99.
maroccanus, *Omocestus*, 97.
maroccanus, *Sphingonotus*, 100.
marshalli, *Canestra*, 73.
mastersi, *Bembidion* (*Cillenus*), 193.
mathura, *Lymantria*, 216.
maura, *Hilara*, 255.
mecistocephala, *Euryphalara*, 119.
Megalopsidia nigerrimus **sp. n.**, 148.
Megaxyela, 34.
melanoma, *Euproctis*, 214.
meridionalis, *Paratettix*, 97.
Mesoblemmus (see *Lissoblemmus*).
Mesoclanis **gen. n.**, 120.
Mesoclanis cribripennis, 120.
Mesoclanis dubia, 120.
Mesoclanis hieroglyphica, 120.
Mesoclanis magnipalpis, 120.
Mesoclanis polana, 120.
mesomelas, *Dacus* (*Gymnodacus*), 117.
mesotiba, *Euproctis*, 215.
Metasphenica, 118.
metathoracicus, *Mischocyttarus*, 135.
Metidacus **subgen. n.**, 117.
micrargus, *Lycaena*, 6.
Microcerata (see *Anarete*).
Micromyia, 173, 254.
Micromyia lucorum, 255.
micropyga, *Sphaerocera*, 127.
miki, *Aprionus*, 234.
millierella, *Lithocolletis*, 46.
mima, *Rhinagrion*, 197, 198.
minax, *Dactylispa*, 116.
miniata, *Oedipoda*, 99.
minimus, *Gonatas*, 17.
minor, *Xyela*, 34.
minturna, *Pratapa*, 172.
mira, *Agra*, 63, 71.
Mischocyttarus ater uniformis **var. n.**, 134.
Mischocyttarus fitzgeraldi **sp. n.**, 134.
Mischocyttarus metathoracicus picturatus **var. n.**, 135.
mishmia, *Pratapa*, 172.
Mnais, 143.
moerens, *Dasychira*, 219.
mollis, *Culicoides*, 158.
Monardia, 173, 204, 235, 236.
Monardia spp., 237–240.
Monardia magna, **sp. n.**, 238.
Monardia monotheca **sp. n.**, 241.
Monardia nigricans **sp. n.**, 242, 255.
Monardia obsoleta **sp. n.**, 240.
Monardia ulmaria **sp. n.**, 240.
monilicornis, *Monardia*, 239.
monochiri, *Decispella*, 114.
Monolepta goldingi, 88.
Monolepta (*Candezea*) *gossypii* **sp. n.**, 88.
Monolexis fôrsteri, 152.
monotheca, *Monardia*, 241.
montana, *Philoganga*, 139.

montana, Vindula erota, 86.
montanus, Calliptamus, 102.
monticola, Agra, 69.
montis, Euproctis, 215.
morosus, Belonuchus associatus, 150.
Morphacris fasciata sulcata, 99.
multinervosa, Devadatta, 138.
multiplicata, Agra, 64, 69.
multiseriata, Perissophlebia, 142.
multisetosa, Agra, 56.
musae, Nodostoma, 249.
muscorum, Joannisia, 261.
Mycophila, 173, 253.
Mycophila barnesi, 254.
Mycophila speyeri, 254.

nacandra, Pratapa, 172.
Naddia kediriana **sp. n.**, 151.
nana, Phaneroptera, 94.
Nanodia (see *Aristotelia*).
nanus, Omocestus, 97.
nasuta, Acridella, 97.
natalensis, Macroptilum, 269.
natalensis, Rhembastus, 88.
nebulosa, Lymantria, 216.
nemorum, Joannisia, 263.
Neocatocha marilandica, 106.
Neomerimnetes flindersiae **sp. n.**, 8.
Nesohaltica vitiensis **sp. n.**, 251.
Neurolyga (see *Campylomyza*).
nevermanni, Agra, 59.
nigerrimus, Megalopsidia, 148.
nigra, Alema, 252.
nigricans, Monardia, 242, 255.
nigriceps, Octhispa, 114.
nigricilia, Redoa, 212.
nigripes, Eugaster, 94.
niphonis, Euproctis, 215.
nipponensis, Catotricha, 102.
nitidulum, Bembidion (*Peryphus*), 37.
nodosa, Joannisia, 263.
Nodostella pendleburyi **sp. n.**, 250.
Nodostoma musae **sp. n.**, 249.
notulatoria, Echthromorpha, 40.
nox, Dasychira, 218.
Numenes disparilis separata, 219.

oberthüri, Dactylispa, 116.
obscura, Agra, 56.
obscurella, Uroplata, 113.
obsoleta, Monardia, 240.
ocellata, Agra, 63.
Ochlerotatus (see *Aëdes*).
ochracea, Allophaea, 197.
ochracea, Telaletes, 120.
Ocnosispa (see *Sceloenopla*).
Octhispa angustula, 114.
Octhispa gentilis, 114.
Octhispa lineola, 114.
Octhispa nigriceps, 114.
Olontura maroccana, 94.
Oedaleus decorus, 99.
Oedipoda coerulescens sulfurescens, 99.
Oedipoda fuscocincta, 99.
Oedipoda miniata, 99.
ohausi, Agra, 62.
oleae, Parlatoria, 272.
Omeretes **gen. n.**, 12.
Omeretes onychialis **sp. n.**, 13.
Omeretes podocarpi **sp. n.**, 13.
Omeretes subcarinatus, 13.
Omocestus alluaudi, 97.
Omocestus lecerfi, 97.
Omocestus lepineyi, 98.
Omocestus lucasi, 97.
Omocestus maroccanus, 97.
Omocestus nanus, 97.
Omocestus raymondi, 97.
Omocestus uhagonii, 97.
Oncocephala gestroi, 114.
Oncocephala senegalensis, 114.
Ontholestes elegans **sp. n.**, 151.
onychialis, Omeretes, 13.
opacella, Pachythelia, 47.
oratoria, Iris, 93.
Orgyia convergens **sp. n.**, 219.
orientalis, Culicoides, 158.
ormerodi, Campylomyza, 180.
ornaticrus, Forcipomyia inornatipennis, 160.
Orthopodomyia pulchripalpis, 74.
ovalis, Joannisia, 258.
Oxychalepus insignitus, 112.
oxyglymma, Bembidion (*Trichoplataphus*), 37.
Oxyothespis maroccana, 93.
Oxytelus (*Tanycracus*) *kedirianus* **sp. n.**, 147.

Pachythelia opacella, 47.
pallipes, Agra, 70.
pallipes, Campylomyza, 175.
pallipes, Dactylispa, 115.
palpalis, Stenobothrus, 98.
Palpomyia fusca **sp. n.**, 266.
Palpomyia spinulosa, 268.
palustris, Joannisia, 262.
Pantana baswana, 216.
pantana, Laelia, 216.
Parabezzia (see *Stilobezzia*).
Paracinema tricolor bisignata, 99.
paracrenata, Sphaerocera, 129.
paraensis, Culicoides, 164.
paraguayensis, Haplodema, 74.
Paratettix meridionalis, 97.
Parlatoria atalantiae, 272.
Parlatoria calianthina (see *P. oleae*).
Parlatoria oleae, 272.
Parlatoria pseudopyri, 272.
Paroxyna, 120.
Paroxyna sororcula, 120.
parvula, Tricampylomyza, 255.
parvulus, Aceraius, 15.
pehlkei, Agra, 60.
pendleburyi, Nodostella, 250.
penicilligera, Pratapa, 168.
Pentaphlebia, 139.
perforata, Agra, 60.
Periplaneta americana, 92.
Perissophlebia multiseriata, 142.
Peromyia, 174, 264.
Peromyia leveillei, 265.
perpusilla, Joannisia, 289.
persuasum, Bembidion (*Plataphus*), 38.
Peryphus (see *Bembidion*).
peyerimhoffi, Dioryctria, 224.
Pezomyia, 173, 235, 243.
Pezomyia vanderwulpi, 243.
Pezotettix giornae, 102.
phaenoptera, Agra, 56.
phaeocraspeda, Redoa, 213.

phaeogona, *Agra*, 60.
Phaneroptera nana, 94.
Philoganga, 139.
Philoganga montana, 139.
phloeobares, *Dasychira*, 217.
picipes, *Agra*, 68.
pictoni, *Forcipomyia*, 161.
picturatus, *Mischocyttarus metathoracicus*, 135.
pilifer, *Aceraius*, 15.
piliserra, *Xyelatana*, 34.
pinetorum, *Cordylomyia*, 202.
pini, *Cryptoparlatoria*, 271.
piperita, *Euproctis*, 215.
Pipunculus zernyi **sp. n.**, 84.
planozona, *Dasychira*, 218.
Plataphus (see *Bembidion*).
Platycleis grisea, 94.
Platydracus (see *Staphylinus*).
Platypria transvaalensis, 115.
plaumanni, *Clinocarispa*, 111.
Plebejus argus, 5.
Pleroneura, 34.
Plesthenus spp., 244, 246–248.
Plesthenus laminatus **sp. n.**, 246.
Pliomelaena, 119.
Plutella porrectella, 47.
podocarpi, *Omeretes*, 13.
podolestoides, *Devadatta*, 138.
Podopteryx, 143.
polana, *Mesoclanis*, 120.
Polybia rufidens, 135.
Polyphagina algerica, 92.
polysphena, *Dasychira*, 217.
pomifoliella, *Lithocolletis*, 45.
populifoliella, *Lithocolletis*, 45.
porrectella, *Plutella*, 47.
postincisa, *Euproctis*, 214.
Pratapa spp., 166–172.
Pratapa deva stella **subsp. n.**, 171.
Pratapa queda **sp. n.**, 172.
Prionellus (see *Campylomyza*).
Probezzia, 269.
prodigiosa, *Agra*, 55.
Projoannisia (see *Trichopteromyia*).
Prosaprionus (see *Cordylomyia*).
Prosopodonta latipennis, 109.
pruni, *Lithocolletis*, 47.
Pseudanarete (see *Anarete*).
Pseudapries crux **sp. n.**, 11.
Pseudoglomeris, 123.
Pseudoglomeris dubia, 124.
Pseudoglomeris semisulcata, 124.
Pseudolimnaeum (see *Bembidion*).
pseudolucillum, *Bembidion* (*Peryphus*), 37.
pseudopyri, *Parlatoria*, 272.
Psyche (see *Pachythelia*).
Psychoides (see *Teichobia*).
Psylliodes simmondsi **sp. n.**, 252.
pubicollis, *Dactylispa*, 115.
Pucerus (see *Bledius*).
pulchricornis, *Xylopriona*, 205.
pulchripalpis, *Orthopodomyia*, 74.
pumilio, *Gonates*, 17.
pumilla, *Campylomyza*, 177.
puncticollis, *Macrolinus*, 14.
punctipectus, *Macrolinus*, 245.
puppa, *Amizmizia*, 102.
pusillus, *Culicoides*, 165.
Pyrgomorpha agarena, 102.
quadriceps, *Lathrobium*, 149.
quadricornis, *Plesthenus*, 248.
queda, *Pratapa*, 169, 172.
querceti, *Xylopriona*, 205.
quercifoliella, *Lithocolletis*, 46.

raleighi, *Forcipomyia*, 160.
ramosa, *Joannisia*, 258.
raymondi, *Omocestus*, 97.
Redoa, 212.
Redoa anser **sp. n.**, 212.
Redoa anserella **sp. n.**, 212.
Redoa phaeocraspeda **sp. n.**, 213.
religiosa, *Mantis*, 93.
reticulata, *Euryphalara*, 119.
Rhamphomyia rhodesiensis, **sp. n.**, 82.
Rhembastus coffeae **sp. n.**, 88.
Rhembastus natalensis, 88.
Rhinagrion, 197, 198.
Rhinagrion viridata **sp. n.**, 198.
rhodesiensis, *Rhamphomyia*, 82.
riedeli, *Agra*, 61.
Rivetina fasciata, 93.
roralis, *Joannisia*, 260.
rubescens, *Sphingonotus*, 100.
rudis, *Cordylomyia*, 199.
rufescens, *Hoplodema*, 73.
ruficornis, *Acanthacris*, 102.
rufidens, *Polybia*, 135.
rufiventris, *Dicheniotes*, 118.
rufus, *Aptinothrips*, 1.
rugostriata, *Agra*, 62.

sagax, *Apanteles*, 224.
saloma, *Vindula erota*, 86.
samoana, *Echthromorpha*, 40.
sanguinea, *Joannisia*, 259.
sannio, *Pratapa*, 170.
Sapho, 143.
savignyi, *Sphingonotus*, 100.
SCATOPSIDAE, 23.
Sceloenopla (*Ocnosispa*) *arrowi*, 109.
SCIARINAE, 23.
scintillans, *Euproctis*, 216.
Sciobia caliendrum, 94.
Sciobia chevreuxi, 94.
Sciobia finoti, 93.
scopariella, *Lithocolletis*, 46.
semifascia, *Gracilaria*, 45.
semisulcata, *Pseudoglomeris*, 124.
senegalensis, *Oncocephala*, 114.
separata, *Numenes disparilis*, 219.
setigera, *Agra*, 72.
severina, *Uroplata*, 113.
sexfissata, *Dicheniotes*, 118.
simmondsi, *Psylliodes*, 252.
simplex, *Aivalykus eclectes*, 155.
sinensis, *Eupolyphaga*, 125.
sinhara, *Pratapa vidura*, 169, 172.
sinicum, *Bembidion* (*Cillenus*), 191.
smaragdula, *Agra*, 54.
sodalis, *Apanteles*, 227.
soror, *Agra*, 56.
sororcula, *Paroxyna*, 120.
spathoglottis, *Agonia*, 115.
sperches, *Aivalykus*, 156.
speyeri, *Mycophila*, 754.
Sphaerocera, 127.

Sphaerocera crenata, 128.
Sphaerocera falcozi, 130.
Sphaerocera micropyga, 127.
Sphaerocera paracrenata, 129.
Sphingonotus spp., 100.
Sphingonotus coerulans atlas **subsp. n.**, 100.
spiniger, Aprionus, 231.
spinulosa, Palpomyia, 268.
spinulosus, Eugaster, 94.
squalida, Campylomyza, 175.
Staphylinus (*Platydracus*) *auroaeneus* **sp. n.**, 150.
Staphylinus (*Platydracus*) *contiguus* **sp. n.**, 151.
Steleopteron, 141.
Steleopteron deichmülleri, 141.
stella, Pratapa deva, 171.
stellifer, Culicoides, 165.
Stenobothrus amoenus, 98.
Stenobothrus palpalis, 98.
Stenospatha, 265.
Stenospatha eriophori, 265.
Stenus (*Hypostenus*) *cinctiventris* **sp. n.**, 149.
Stereoderus lucens **sp. n.**, 12.
Sternocthispa **gen. n.**, 113.
Sternocthispa gracillima **sp. n.**, 113.
Sternoplispa, 113.
Sternostena, 113.
Sternostena costaricana, 110.
Sternostena varians, 110.
Sternostena varians triangularis, 110.
stettinensis, Lithocolletis, 46.
Stilobezzia, 266.
Stilobezzia chaconi **sp. n.**, 166.
stirpium, Monardia, 236.
strepens, Aiolopus, 99.
strigipennis, Locharna, 219.
strobli, Campylomyza, 177.
strobli, Lestremia (*Anaretella*), 27.
Strobliella, 108.
Strobliella intermedia, 108.
stylifer, Aptinothrips, 1.
Styloconops albiventris, 158.
subcarinatus, Omeretes, 13.
subhomalina, Clinocarispa, 111.
submarginata, Redoa, 212.
subobsoleta, Catotricha, 102.
subsolans, Lycaeides, 7.
sudica, Pratapa, 172.
sulcata, Morphacris fasciata, 99.
sulcatus, Hecabolus, 152.
sulfurescens, Oedipoda coerulescens, 99.
Sumeria **gen. n.**, 144.
Sumeria dipotamica **sp. n.**, 144.
sylvicola, Campylomyza, 181.
syringella, Gracilaria, 47.

Tanycracus (see *Oxytelus*).
tarnieri, Agra, 53.
Teichobia verhuellella, 47.
Telabetes **gen. n.**, 119.
Telabetes ochracea, 120.
Telebolus corsicus, 156.
Temnochalepus lugubris, 112.
tenuicornis, Dactylispa, 114.
Tephrella, 117.
Tephrella decipiens, 117.
tephronota, Dicheniotes, 118.
tetrachroma, Euproctis, 215.
Tetraneura (see *Devadatta*).
Tetraxyphus, 204.
Tetraxyphus ater, 206, 207.
Tettigonia lozanoi, 94.
Tettigonia viridissima, 94.
thalassinus, Aiolopus, 99.
Thalpomena algeriana, 99.
Thalpomena algeriana flavipennis **ab. n.**, 100.
Thaumatoneura, 143.
thibetana, Eupolyphaga, 124.
Thore, 143.
Thysanognathus monostictus, 159.
tibetana, Glomerexis, 123.
tillyardi, Bembidion (*Cillenus*), 195.
transvaalensis, Apanteles, 227.
transvaalensis, Platypria, 115.
Trialeurodes williamsi **sp. n.**, 186.
triangularis, Sternostena varians, 111.
triarthra, Anarete, 31.
Tricampylomyza, 255.
Tricampylomyza parvula, 255.
Trichalospatha, 265.
Trichalospatha conigera, 265.
Trichoplataphus (see *Bembidion*).
Trichopteromyia, 173, 235.
Trichopteromyia modesta, 236.
Trichostigmus ursulus, 244.
tricolor, Paracinema, 99.
Tricolpodia, 265.
Tricolpodia anomala, 265.
trifida, Bryomyia, 209.
trimera, Joannisia, 258.
tringipenella, Gracilaria, 47.
Troginus (see *Trogophloeus*).
Trogophloeus (*Troginus*) *louwerensi* **sp. n.**, 147.
Turnaca, 145.
turrita, Acrida, 97.

uhagonii, Omocestus, 97.
ulmaria, Monardia, 238.
umbellatarum, Apanteles (see *A. circumscriptus*).
uniformis, Mischocyttarus ater, 134.
Uromenus chapmani **sp. n.**, 95.
Uroplata obscurella, 113.
Uroplata severini, 113.
Urosema (see *Campylomyza*).
ursulus, Trichostigmus, 244.
uvarovi, Acrida turrita, 97.
uvarovi, Forficula, 125.
uvarovi, Lissoblemmus (*Mesoblemmus*), 93.

valga, Empis (*Coptophlebia*), 83.
vanderwulpi, Pezomyia, 243.
varians, Sternostena, 110.
variolosa, Agra, 56.
verhuellella, Teichobia, 47.
versicolor, Aëdes, 74.
vexatrix, Dactylispa, 115.
vidura, Pratapa, 168.
viduus, Chalepus, 112.
Vindula arsinoë, 86.
Vindula erota, 86.
virgata, Agra, 62.
viridata, Rhinagrion, 198.
viridimicans, Bembidion (*Pseudolimnaeum*), 52.
viridissima, Tettigonia, 94.
vitiensis, Colaspoides, 250.
vitiensis, Nesohaltica, 251.
vittata, Campylomyza, 175.

wansoni, Culicoides (see *C. distinctipennis*).

wattenwylianus, Calliptamus, 102.
wilemani, Dasychira, 217.
williamsi, Trialeurodes, 186.
woodfordi, Atrichopogon, 162.

Xenochares cephalotes, 112.
Xenorhyncocoris **gen. n.**, 135.
Xenorhyncocoris caraboides **sp. n.**, 135.
xuthonella, Euproctis, 214.
Xyela, 32.
Xyela spp., 34–36.
Xyela curva **sp. n.**, 36.
Xyelatana **gen. n.**, 34.
Xyelatana longula, 34.
Xyelatana piliserra, 34.
xylophila, Cordylomyia, 200.
Xylopriona, 173, 204.
Xylopriona pulchricornis, 205.
Xylopriona querceti **sp. n.**, 205.

yasa, Pratapa, 172.
yokohamae, Bembidion (*Cillenus*), 193.
yunnanensis, Dasychira locuples, 219.
yunnanensis, Eupolyphaga, 124.

zebra, Jamides, 170.
zernyi, Pipunculus, 84.
Zygoneura fenestrata (see *Lestremia* (*L.*)).